THE TIMES
Higher Education
SUPPLEMENT

Polytechnic course fees should be for 'duration'

by Ian Coxon

Tuition fees should be fixed for an entire course and not reassessed annually. Staff and students from 27 polytechnics reached this view at a recent one-day conference at Leeds Polytechnic on the problems posed by the latest tuition fee increases.

Many delegates cited cases of self-financed students whose studies had been curtailed because of large fee increases for which they had not budgeted. There was also a consensus that the "ill-defined and widely varying systems" adopted by local authorities for considering cases of hardship led to unnecessary worry and confusion.

"The major conclusion to have come from the conference is our recognition of the general state of chaos which exists throughout the country with regard to the raising of fees and their remission," said Dr Patrick Nuttgens, the director of Leeds Polytechnic, who chaired the meeting.

It was held after the academic board of Leeds Polytechnic decided last May that there was need for a forum to discuss polytechnic tuition fee increases. Mr Trevor Phillips, the general secretary of the National Union of Students, said that the Government was spending large sums of money creating job opportunities for young people. "But it is denying them the right to many of these jobs by severely restricting access to higher and further education with astronomical increases in tuition fees."

An overwhelming number of the 80 delegates, including many polytechnic administrators, felt that in the long run tuition fees should be abolished altogether.

Many expressed fears about the future of non-designated courses which do not carry mandatory grants. "The character of the polytechnics may be seriously affected because of the distinction between designated courses which attract mandatory awards and the non-designated which attracted discretionary awards" Dr Nuttgens said.

"A large variety of courses, both undergraduate and postgraduate, frequently of a vocational nature for which there is current demand, may well suffer from the raising of fees and from the decision of many local authorities to limit discretionary awards."

Speaking about the number of students who are being seriously affected by the fees increase Dr Nuttgens said: "My impression is that about 10,000 students are affected, of whom about 3,000 might have to give up their courses because of hardship."

A detailed report of the conference is being prepared and will be circulated widely to politicians, Government departments, local authorities and all other interested bodies. The organizers hope to hold a second conference in the autumn.

Medical teachers and research workers set up new union

by Clive Cookson
science correspondent

A new union for medical teachers and research workers is being set up under the auspices of the British Medical Association. The Medical Academic Staff Conference (MASC), as it will be known, will replace the BMA's Full-Time Teachers and Research Workers Committee and the smaller Association of University Clinical Academic Staff (AUCAS) and will represent about 3,000 medically qualified teachers and research workers.

The establishment of MASC was approved by the BMA annual meeting in Glasgow last week, after AUCAS (not a BMA body) had agreed to dissolve itself and pass its interests and assets on to the proposed new group.

MASC will meet for the first time at the end of September in Oxford, with one clinical and one preclinical teacher representing each medical school, and research worker representatives. A 16-member medical academic staff committee will be elected to act between conferences, which will be held at least once a year.

Preclinical and clinical subcommittees will look after the interests of the two classes of member. The clinical subcommittee will provide negotiators to meet employers' representatives at the Clinical Academic Staff Salaries Consultative Group, where their pay and conditions are discussed.

The conference will meet separately in clinical and preclinical sections (depending whether the medically qualified teacher is paid according to NHS scales or nonclinical university scales) before coming together in a plenary session.

Professor Peter Quilliam, of St Bartholomew's Hospital Medical College, chairman of the BMA teachers' committee and a guiding spirit behind MASC, said a major subject of interest for the clinicians would be possible changes in the negotiating machinery for clinical academic pay and conditions.

The preclinical side is likely to be preoccupied with the continued existence of medically qualified teachers in preclinical departments, in the face of the rapid decline in their numbers over recent years (caused principally by low salaries in relation to clinical teaching and health service practice).

The whole conference will be concerned about the way the medical profession has set itself against any further expansion of medical schools, as a result of an increasing flow of predictions that Britain is on the point of producing too many doctors. This was shown by last week's BMA meeting, which called for a freeze on medical school intake after this year.

Speaker after speaker conjured up the spectre of doctors on the dole, and there were demands that medical student numbers should not just be frozen but cut by 25 per cent or more. Medical academics at the meeting decided it would be inappropriate for them to comment as a group on student numbers, but they will have to face the issue when MASC convenes in September.

UGC gives Cardiff ultimatum

by Frances Gibb

The University Grants Committee has rejected a plea from University College, Cardiff, for more time to draw up proposals for joint development with the other university institutions in Cardiff.

At a recent senate meeting Dr C. W. Bevan, the college principal, said Sir Frederick Dainton, chairman of the UGC, had made it abundantly clear that unless the college was prepared to join the University of Wales Institute of Science and Technology immediately in putting an outline growth plan it would take a serious view of its lack of cooperation; a view which would inevitably be reflected in financial provision for the college.

The ultimatum was given in view of the "pressing problems" facing UWIST in finding new accommodation for their existing departments, which are at present in rented buildings, he said.

In March, the UGC requested the three university institutions in Cardiff (University College, UWIST and the Welsh National School of Medicine) draw up plans for joint development. Only on this basis, it said, could the commitment of extra capital resources be justified.

University College and UWIST have now submitted to the UGC an outline growth plan which deals with the purchase of land. It is proposed that they jointly acquire sites for engineering and that those close to the college's main building be allocated to UWIST chiefly for arts and social sciences.

The plan for more thorough integration after a special senate meeting in June which felt that if it were to be discussed, then subjects like the rationalization of teaching and the possibility of a full merger — this would require at least months, it was agreed.

London Bill goes on

continued from page 1.

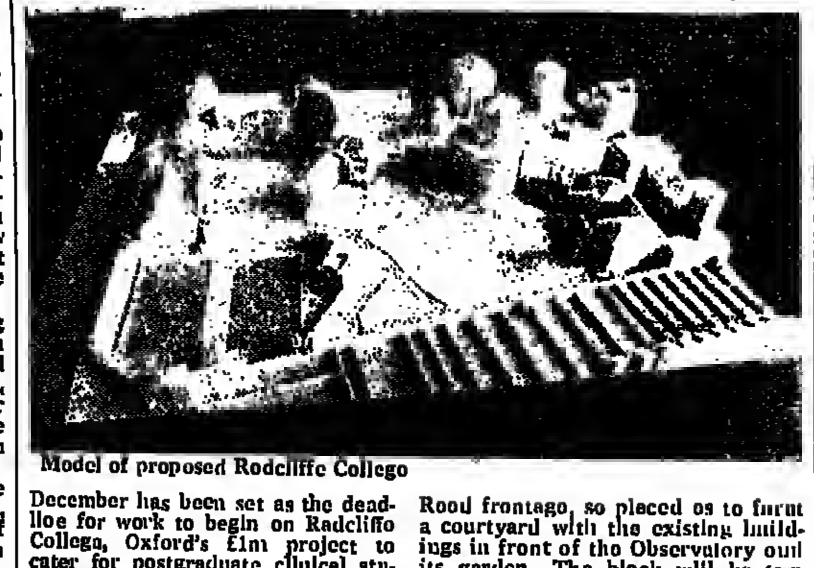
came as a complete surprise. The university was pleased, however, that the union had agreed to the Bill be carried over to the next session, and would be discussing with NUPE representatives the matters which concerned them.

Commenting on the university's recent offer to consult trade unions if the AUT and Nalgo dropped their petitions, he said that although the consultation would apply to NUPE the offer had not actually been made.

The four points of concern NUPE put to Dr Hartley, and which he agreed would be discussed before Parliament begins on November, were that non-teaching staff be represented on committees; that there be a policy committee comprising union and university representatives on all matters of policy; and that there would be a committee for developing stronger negotiating machinery between the union and the university, which might have the power to force the collegiate council to make decisions.

It also wanted representation on the body making the statutes which will be implemented, subject to certain safeguards and after extensive consultation, if the Bill is passed.

December start for Radcliffe



Model of proposed Radcliffe College

December has been set as the deadline for work to begin on Radcliffe College, Oxford's £1m project to cater for postgraduate clinical students. City planning authorities have given approval for the first stages.

The university surveyor, Mr Jack Lankester, is to design a set of buildings that will merge unobtrusively with the eighteenth-century architecture of the Radcliffe Observatory and its ancillary buildings which will form the heart of the new college.

Osler House and the Tower of the Winds, built in 1794 and described by Pevsner as "the architecturally finest observatory of Europe", will both be part of the college.

The design consists of a new L-shaped block behind the Woodstock Road frontage, so placed as to form a courtyard with the existing buildings in front of the Observatory and its garden. The block will be two storeys high, with double-hung sash windows and pitched tile roofs. It will be faced with natural stone.

The block will comprise eight tutors' rooms, a seminar room, two flats for married students, changing rooms, offices and a porter's lodge. The courtyard itself, now cobbled, will be paved over.

The second stage of the development will involve renovating the inside of the Tower of the Winds and the Observatory to make it the social centre with, among other things, a library and common rooms.

Stages one and two have been approved by the planning authorities. The third stage will involve a block of about 40 study bedrooms still to be designed and approved.

Sussex unit to examine cash allocations for big science

The way British Governments have allocated hundreds of millions of pounds to prestigious big science projects since the last war is to be examined by Sussex University's Science Policy Research Unit.

A Social Science Research Council grant of £26,000 has just been approved for the study which, it is thought, will be the first British analysis of the benefits and costs of big science. The need for it has been pointed out several times recently (amongst others by Sir Frederick Dainton, chairman of the University Grants Committee, in evidence to the Commons Select Commons Select Committee on Science and Technology).

The investigation will be supervised by Dr Roy Turner and Mr Keith Pavitt, of SPRU and Dr Norman Dombey, reader in theoretical physics at Sussex. They are looking for another physicist and a social scientist to carry out the work.

Research at three high energy physics laboratories (Daresbury, Rutherford and CERN) and astronomy centres (Jodrell Bank, the Mullard Laboratory and the Royal Greenwich Observatory) will be assessed according to three basic criteria: the intrinsic merit of the science as a contribution to human knowledge, educational benefits for those who teach in higher education or go on to work in other scientific fields, and technological benefits for industry.

As well as looking at these established centres, the team will examine two or three recent proposals for research projects involving large capital spending and high operating costs—perhaps the new laser and neutron beam facilities at the Rutherford Laboratory, and the JET European fusion project.

The difficult task of assessing scientific merit will be tackled with the help of physicists at Sussex and other universities. In addition, industrialists will be asked whether they feel big science produces more or less technological spin-off than other basic research.

The investigators may not be able to get at all the relevant documents, Mr Pavitt pointed out, because of the British secrecy laws. "But even if we cannot get across to the documents we do have access to the people."

The findings will add fuel to the argument over the proportion of Science Research Council funds that should be devoted to a small number of multi-million pound projects rather than to the thousands of research applications from individuals or small groups in university and polytechnic departments.

Policy studies finance doubts

continued from page 1.

most of the major policy bodies when he said their financial position was "a bit Malthusian"—a danger the SSRC would compete with them for a limited amount of policy studies money.

The same point was made at the meeting of the SSRC a fortnight ago which decided to invest £2m of the council's money in policy studies. Some members also thought the council was rushing into the new area simply to stake a claim without adequate regard for the administrative and academic consequences.

Policy studies specialists, such as Professor L. A. Gunn, of Strathclyde University, were this week a little puzzled about how the proposed institute would relate to recent SSRC initiatives in the fields of health policy studies and the study of central and local government, on which the council has recently decided to spend up to £½m.

On behalf of the council, Professor Peter Hall of Reading University, who has played a leading part in promoting policy studies, denied the SSRC would have difficulty selling policy studies to the foundations and private companies.

He said: "Policy studies is fairly well understood among them and the detail in our proposal will emerge only in negotiations. We don't regard this proposal as sure-fire; it is a sort of provisional announcement. A great variety of discussions is now going to take place."

Chatham House reaction, page 3

TEC to supervise art courses

The Technician Education Council is to supervise examinations and courses in art and design.

About 15,000 students in more than 100 art and further education colleges will be affected. Over the next few years TEC qualifications will replace those organized by the City and Guilds of London Institute, the Royal Society of Arts and other examining bodies.

A new committee for art and design will be created within the TEC which will contain representatives of both the colleges and employers and will liaise with the Business Education Council.

The TEC's move is part of Department of Education and Science policy and will eventually help coordinate training and examining in the field. It will also "help to integrate the design factor into British productive industry and improve product design."

A TEC official added: "It will also make new types of vocational courses possible in which design is more closely related to technology or commerce."

NEXT WEEK

Don Cupitt: conservative Christianity
Richard Hoggart on higher education and the arts
University holidays
Frances Gibb on arts centres

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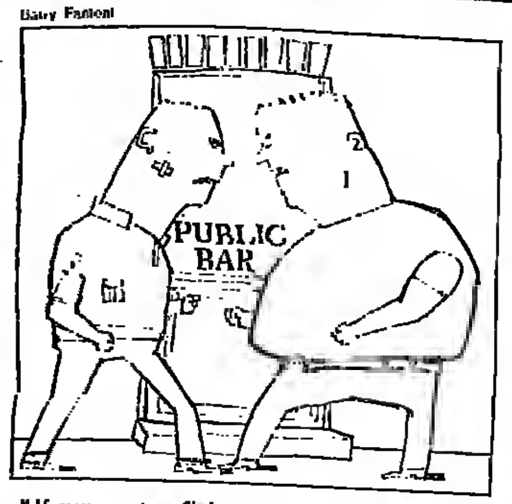

"If you want a fight, mate, step inside."

The pint that thinks it's a tort

by Stephen Pile

The next time you are carousing in a Whitbread public house, take care lest you become an Oxford research statistic. For the brewery is to launch a foundation under which a team of academics will examine "violent encounters in relation to alcohol".

To herald the event *The Times* and other national newspapers have carried full-page advertisements which feature a merry "bottoms-up" photograph depicting Arthur and Rita, a mustachioed landlord and his dirndl-bedecked wife, amidst the sort of customers who know when they have had enough.

However, its frame is shattered and its glass broken, presumably by the sort of customer who does not know when he has had enough, and who the Oxford researchers will study for the next two years.

From the autumn all Whitbread landlords will send them full details of any incident involving this sort of brutish toper. The researchers will then report periodically to a specially formed committee of academics, public figures and members of the Whitbread board with a view to publishing a report suggesting ways in which pub violence can be curtailed.

Mr Michael Argyle, reader in psychology who will oversee the work, said "The project is to be called 'The genesis, consequences and interpretations of violent encounters'. Four salaried people will work on it and two senior members of this department will oversee it".

But what if, as seems inevitable, drinking is found to be among the root causes of trouble? "Most people do not go into a pub to get canned", a Whitbread spokesman said, "and it may be that the team will recommend harsher legal penalties for those who do. We shall have to wait and see."

This in itself may require new advertising: "Trophy, the pint that thinks it's a tort."

Cardiff accused of disregard for democracy

by Frances Gibb

A storm of protest has been provoked by the verdict of the independent inquiry into recent appointments at University College, Cardiff, announced in July.

Academics from several universities have expressed concern that the verdict, which was accepted by the college council as a "complete vindication" of the principal, Dr C. W. L. Bevan, and administration, would shake public confidence in the university system. It would also deter lecturers from applying to Cardiff for jobs.

Fifty academics, including two professors, have written to the *Western Mail*, calling on the college to reform its system and style of government so that "the disquiet brought to the surface and increased by this report is allayed". They also call on the University of Wales to investigate the operation of the college's appointments procedures.

The inquiry was set up under Mr H. E. Francis, QC, following the discovery by students of a dossier of letters concerning recent appointments at the college. These showed that both lecturers concerned had been approached by Dr Bevan before advertisements appeared for the posts. It was also revealed during the inquiry that a lecturer had been invited to nominate the external assessors on the selection committee.

Mr Francis concluded that both had been selected after proper and thorough procedures, and dismissed the notion of a "West African connection", a suggestion in the student newspaper that several members of the college staff had been appointed not on their merits but because of links with universities in Nigeria where Dr Bevan had worked.

Lecturers are arguing, however, that while they agree with the facts as presented in the report, they strongly dispute its conclusion and that it vindicated the principal.

In the letter to the *Western Mail* they draw attention to the fact that the principal invited an applicant to nominate two external assessors, which, they say, is "clearly contrary to natural justice". Dr Bevan was also found to have declared in a letter that a particular post had been created several weeks ahead of the decision of the college council to create it: "behaviour which the report finds to be above reproach."

"The college council", the letter adds, "having exonerated this infringement of its right satisfactorily, has effectively authorized the principal to ignore the college charter wherever it is convenient for him to do so."

In a letter to *The THES* this week, academics from six university institutions say: "If it is accepted practice that one candidate may be invited to name the external assessors on a selection committee, we shall think very seriously indeed before applying for posts in that institution, and have no doubt that many of our colleagues will be similarly deterred.

"This is not merely a matter of parochial concern; it raises serious issues of public confidence in a university system which has always taken pride in its tradition of self-government."

In another letter over 30 Cardiff lecturers say: "We believe that very many people who are concerned for the good name of higher education will find the situation in Cardiff revealed by Mr Francis to be quite incompatible with the standards expected in public life generally and universities in particular."

Mr Laurie Sapper, general secretary of the AUT, said this week that it was not unusual for universities to invite lecturers to apply for posts. This was particularly so in the case of chairs, masterships of Oxbridge colleges and almost always for vice-chancellorships.

Dr Bevan

It was the AUT's policy that all posts should be advertised; all on selection made by interview. But universities had differing practices. Some, such as Birmingham, advertised all academic posts. Many also stated in their advertisements or in job particulars that they reserved the right to invite lecturers who had not applied to be considered.

The principal had also been excused by the report for telling a potential applicant that the chair in question might not be advertised if he were not available; for overriding decisions of a faculty examining board; and for fostering a plan whereby a professor on sabbatical leave from an overseas university would be appointed on a second salary at Cardiff on a full-time basis.

"In none of these cases are the ... procedures ... the lecturers say. ... "In our view their acceptability is equally clear. We feel demeaned by the council's acceptance of the report's effective disregard alike of democratic procedures and academic values."

Letters, page 16

ILEA adopts overseas student quota

by Sue Reid

The Inner London Education Authority has agreed a formula with the Department of Education and Science which will allow it to introduce an overseas students' quota system in the colleges and polytechnics it funds without contravening the Race Relations Act.

A confidential letter from the authority outlining the plan is now in the hands of the principals of all inner London's colleges and the directors of the five polytechnics. An accompanying document from the DES giving full details of the new "exclusion" arrangements is expected to form the basis of a nationwide circular on the Race Relations Act and its impact on overseas students which is to be sent to all local education authorities next week.

The ILEA letter states: "The secretary of state has now approved arrangements which provide for the restriction of the numbers of overseas students admitted to colleges and polytechnics aided or maintained by the authority."

The DES document maintains the latest arrangements will allow the restriction of overseas students on full time or sandwich courses from this September. Colleges where the percentage of overseas students did not exceed 10 per cent of the total in 1975-76 have been told to freeze their foreign numbers at this level in the coming academic year.

In the case of other colleges where in 1975-76 the overseas numbers exceeded 10 per cent a different quota formula has been laid down ... reduce the numbers in excess of 10 per cent by one fifth from this autumn.

The DES has also revised the definition of an overseas student. The date for the completion of the three-year qualifying period of residence after which foreign students can be regarded as home students has been altered.

While this aspect of the arrangements may yet be revoked by the DES the document in the hands of the colleges states: "The qualifying period must now be completed before the date of the student's application for admission to the course, instead of the date of commencement of the course." This effectively adds several months to the period of residence required.

Discrimination on the basis of nationality or place of residence does not contravene the Race Relations Act if it takes place in line with special arrangements made with the approval of a Minister of the Crown. The new arrangements agreed by Mrs Williams, secretary of state for education and science, fulfil this requirement.

Publication of The THES

We regret that *The Times Higher Education Supplement* was not published last week as a result of official action by the National Graphical Association machine manager employed on *The Times* supplements. We apologize for the inconvenience caused to readers and advertisers.

This week's specially extended issue of *The THES* contains all the advertisements and most of the editorial features that would have appeared last week.

Adult council head named

Dr Richard Hoggart, warden of Goldsmiths' College, London, has been appointed first chairman of the new Advisory Council for Adult and Continuing Education, the Department of Education and Science announced this week.

Dr Hoggart, aged 58, is a former full time tutor in adult education. He became director of the Centre for Contemporary Cultural Studies in 1963 and in 1970 was appointed assistant director general of UNESCO, a post he held for five years prior to joining Goldsmiths' in 1976.

Other members of the new council, which will advise generally on adult education in England and Wales and which has a brief to promote cooperation between the plethora of bodies in the field, have yet to be appointed, the DES said. It is expected that the full council will meet for the first time early in October.

Dr Hoggart, who has served on the Arts Council and the Pilkington committee on broadcasting, will be consulted by the department about the council's membership, which will be drawn from the various main interests in adult education including the local education authorities, the voluntary bodies, professional associations and "consumers".

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Better protection for short-contract staff

by Mike Buckenfield

An important legal ruling affecting thousands of lecturers and research workers on short-term contracts—about 4,000 in the universities alone—has been made by the Employment Appeal Tribunal.

The ruling closes the loophole allowing employers to argue that there could be no appeal against unfair dismissal where a contract provided for either side to give notice ending it before the normal expiry date.

If the tribunal had ruled differently the way would have been open for widespread evasion of unfair dismissal provisions by employers. Compensation payments could have been avoided by offering workers short-term contracts with the "get-out" clause allowing earlier termination.

However, the tribunal ruled that a worker on a short, fixed-term contract that is not renewed is entitled to lodge a claim for wrongful dismissal, even though his contract provided for earlier termination before the fixed term expired.

The problem of dismissal arose, initially, over interpretation of the Trade Union and Labour Relations Act, 1974, which said staff on short-term contracts could be said to be dismissed if, at expiry, contracts were not renewed on the same basis as before. A worker could then make a case for compensation if the failure to renew a contract was unfair.

The onus of proof lies on the employer: he must prove a dismissal was fair. Recognized grounds for this include redundancy, misconduct, incompetence and "any other substantial reason". The last could mean that money from the body funding a post had run out, although this ground has yet to be tested at law, and more commonly that the employee, in taking the job, clearly recognized that the work was of limited duration.

Employers would be on shakier ground defending dismissal where a contract was not renewed but the same post was advertised later.

In 1975 the Court of Appeal ruled that a contract including provision for the employer or employee to give notice before the normal expiry date was not a fixed-term contract and thus evaded the dismissal provisions.

In rectifying the situation the tribunal president, Mr Justice Phillips, who heard four appeal cases with two lay judges, Mr J. Jack and Mr J. G. C. Milligan, said: "It was quickly and widely seen that here was a way to avoid the provisions of the Act. Many employers have taken advantage of this.

"Some have drafted their contracts of employment specifically for that purpose; others have taken advantage of the fact that the contract of employment happened to be in that form." The judges felt that to sustain the employers' arguments would lead to "disastrous consequences".

"It would lead to the result that the provisions relating to unfair dismissal could be evaded in any case where an employer could persuade an employee to sign a contract of employment for an 'apparent fixed term'."

In one case, supported by the Association of University Teachers, the tribunal ruled that Mr Peter Throsby, a lecturer at Imperial College, will have been "dismissed" if the college goes ahead with a threat to end his term as warden of a hall of residence from next month.

However, his appeal was not allowed on the technical ground that a person cannot seek compensation for a prospective termination of employment. Nevertheless, the tribunal's main ruling regarding dismissal means that Mr Throsby's case can be considered on its merits at a future date.

In the other cases, the tribunal allowed appeals by two former BBC porters and dismissed an appeal by Gwent County Council against a Cardiff industrial tribunal ruling that a college of further education lecturer, Mr Lyndon Lane, had been unfairly dismissed. Mr Lane was awarded £225 compensation.

The general-secretary of the Association of University Teachers, Mr Laurie Sapper, clarified the position of staff on short-term contracts: "Staff on contracts of under two years, when their terminal date comes up, can claim unfair dismissal compensation provided that the person concerned has served at least six months with the college or university.

"Whether the claim will succeed or not depends on whether the contract was a genuine term contract—that is, that both employer and employee recognized quite clearly that the contract was for the limited period, and not a cover for the beginning of longer-term employment under the guise of a series of short-term contracts.

"For contracts of two years or more without any provision for notice before the terminal date, the same considerations apply except that both employer and employee can agree that the latter gives up his rights to claim unfair dismissal compensation or redundancy payment, but this must be in writing by agreement.

"For contracts of two or more years, with provision for notice in the contract prior to the period terminating, the same considerations apply again. But here staff cannot agree in contract out of their rights to claim unfair dismissal compensation or redundancy payment."

Leader page 16

Compensation ruling 'will hit lecturers'

Redundant college lecturers obtaining senior posts in schools will not generally be entitled to compensation for inconvenience or loss of status.

This is the view expressed by Mr Len Sheen, principal administrative officer of the Burnham further education secretariat, in an article published in the journal *Education*.

Mr Sheen's arguments are based on the results of the first industrial tribunals to rule on disputes between lecturers and the compensating authority, the Department of Education and Science, in the case of the voluntary colleges and the employing authority in other cases.

He said this week that a general picture was emerging from the cases heard so far, though the decision of one tribunal was not binding on another. "One can say that a scale one or scale two post in a school would probably not be considered comparable to a senior lecturer's job, with an element of doubt about scale two. Scale three and four posts probably would."

In his article he says that the main body of cases so far have turned on the definition of "reasonably comparable" employment. An applicant is not entitled to resettlement or long-term compensation if he has been offered "reasonably comparable" employment with the job he has lost.

"Resettlement compensation" is an enhanced redundancy payment subject to a qualifying period of two years in "relevant employment". Long-term compensation, according to Mr Sheen is a regular payment of up to two-thirds of annual emoluments lost and is subject to a five-year qualifying period.

Mr Sheen says that a crucial case is that of C. J. Bull v the Secretary of State. Mr Bull, a former senior lecturer at Coloma College, West Wickham, had his claim for compensation refused on the grounds that a scale three head of mathematics post was reasonably comparable even though he had 19 years previous teaching experience in schools. He is to appeal.

The tribunal found that the nature of the work was comparable on the grounds that it was teaching. It also ruled that the salaries, responsibilities and status of both were reasonably comparable.

Mr Sheen says the tribunal accepted there were differences in social regard but did not accept that these rendered the two jobs incomparable. Mr Bull's appeal to the High Court will have to be on a point of law.

Mr Sheen says that so far there have been two disputed cases where the applicant has been successful in his claim for compensation.

In the first the tribunal ruled that the post of senior lecturer in music at a voluntary college was not reasonably comparable with a scale two peripatetic music teaching job.

In the second it was decided that a scale one post in a school was not comparable with the post of senior lecturer. The tribunal felt that the teacher's responsibilities had been much reduced and that the standing of the two jobs was very different.

Mr Keith Scribbins, assistant secretary (salaries) at the National Association of Teachers in Further and Higher Education, agreed that the tribunals have been sensible. "They have rejected the DES idea that any post with a safeguarded salary is reasonably comparable. Apart from the Bull case we are happy."

He said that most cases for compensation have been accepted and that it is unlikely there will be many teaching places in schools reckoned to be reasonably comparable.

Leader page 16

Stockwell decision halts merger at eleventh hour

by Judith Judd

A merger which would have formed the Bromley Institute of Higher Education has been halted at the eleventh hour after the Government's decision to end teacher training at Stockwell College of Education.

Bromley Education Committee has recommended to Bromley Council that arrangements for the merger, due to take place in September, should cease. The committee has also recommended that steps should be taken to declare redundant the new college's director, Mr John Talbot.

Mr Talbot was appointed to the directorship after he was made redundant from his £10,000-a-year job as assistant director of resources at Newcastle Polytechnic in October. The redundancy followed a controversial survey on costs and staffing levels.

A spokesman for Bromley Council said it was felt that the merger was pointless now that one of its main components, teacher training, had been removed. "It is like taking away one leg of a three-legged stool."

The two other institutions involved, Ravensbourne College of Art and Design and Bromley College of Technology will remain independent and freestanding institutions.

The fate of the Bromley college will be of interest to the other institutes of higher education which are losing their teacher training. Ealing Council is to review the position of its institute of higher education in September.

The future of Stockwell has some diversified as well as other training courses, derided by the Kent and John Education Committee. R. F. Parr, Stockwell's principal, said: "I think the committee have felt that Stockwell was the strongest partner of the three very aggravating because the letter herself asked us to form institute so that teacher training could be integrated with higher education."

Stockwell has strong diversified degree courses in film and studies and a degree in educational and educational broadcasting. college hopes they will be taken by one of the other colleges, probably the technical college art department.

In the meantime, Stockwell is preparing a case to put to the Ombudsman alleging that it has been unjustly treated through maladministration.

Mr Talbot, who is ... this week that he hoped to be eligible for retirement ... Crombie Code. "I have experience overseas so I can help a voluntary organization."

He could understand the council had felt unable to support the institute though higher education in the area would suffer because of ending of teacher training as well.

SRC make the most popular fellows

by Clive Cookson
science correspondent

The Science Research Council received so many applications for its new five-year advanced fellowships, designed for outstanding young scientists who have not yet obtained tenured posts, that it has offered twice as many as it had intended.

The 251 applicants included many excellent candidates and the SRC found funds to offer awards to 31 of them, rather than the 15 originally envisaged. "Even so, many good candidates had to be rejected", the council said.

Thirteen fellowships will be held at Cambridge, seven at Oxford and four at Imperial College, London. Birmingham University gets two, and Bristol, Leeds, Nottingham, Manchester, Strathclyde and Sussex universities and the Zoological Society of London one each.

The SRC is most unlikely to continue offering advanced fellowships at the rate of 33 a year, because at about £6,000 per person, the expense would mount up too rapidly.

In addition, the council expects a less overwhelming response in future years. Last year, when the SRC launched its five-year senior fellowships, there was similarly a very heavy initial response, but this year there has been much less interest. In fact only two senior fellows have been appointed, compared with six last year.

Applications for two-year postdoctoral fellowships rose slightly to 221, from 201 last year. The number awarded fell from 75 to 69, of which 27 are tenable overseas. The total cost of this year's new fellowships will be around £600,000 per annum (£24,000 for the two senior fellows, £200,000 for the advanced and £380,000 for the postdoctoral fellows).

The closing date for applications for next year's advanced fellowships will be October 31, 1977. For senior fellows it is November 30.

More school leavers go for degrees

The number of school leavers directly entering degree courses increased by 11 per cent to 7... year while only 9,000 ... teacher training courses—less than a ... as many as a decade ago.

Provisional figures released by the Department of Education and Science show that 707,000 ... left school last year; 22 per ... more than in 1975.

Of all leavers, 84 per ... attempted CSE or GCE examinations, almost as many (82 per cent) ... with some success. However, 16 per cent—112,000 ... gained one or more A-level pass. This was 27,000 more ... a decade ago, and the proportion gaining two or more passes ... creased in the period.

A strong trend in the last ... years has seen the increasing popularity of mixed science and ... social science A levels. In 19... just over one half of those with ... or more A-level passes had ... arts or social science subjects ... just over one-third had ... science subjects. Only 14 per ... had taken a mixture.

By last year, however, those ... ing solely arts or social science subjects had declined 4 per ... 48 per cent and those opting for ... sciences from 34 to 31 per ... Those taking a mixture of ... had increased to 21 per cent.

The department's figures also show that nearly one in eight leavers from comprehensive schools gained one or more A-level ... pass and one in six went directly into full-time further education, one in 18 entering degree ... other training courses.

In comparison, one half of all ... mar school leavers went into ... time further education; ... three leavers gaining places ... higher courses.

New cash allowances urged for 16 to 18 year olds

by Sue Reid

The Government is being urged to introduce a new wide-ranging system of financial allowances for all young people aged between 16 and 18 outside permanent employment.

The call has come from the National Association of Teachers in Further and Higher Education which is pressing for "student wages," on the lines of the £18-a-week training allowances for Britain's young unemployed successfully proposed earlier this year in the Holland report.

A strongly-worded policy statement issued last week by the 70,000 member union on the education, training and employment of the 16 to 19 age group says: "We urge the Government to establish common guidelines for the mandatory assistance from public funds of all young people under 18 and not in employment in order to eliminate the anomalies of the differential incentives."

The NATFHE has expressed fears that the generous training allowances recently given Government approval will detract potential students from further education courses and encourage school leavers to become unemployed and gain the allowances through "playing the system".

Mr Bryan Davies, NATFHE member and MP for Enfield North, supporting the union's statement, said: "We have seen clearly over the last two years the Department of Education and Science's failure to match the power of the Department of Employment and get resources into this field."

He added: "We are in a situation where the Government is ploughing resources through the DoE and the Manpower Services Commission into the crucial problem area of the 16 to 19 age group while at the same time money coming into the traditional education sector is being frozen or reduced."

Commenting on the inconsistencies likely to be caused by training allowances if they were not matched by student "wages", Mr Davies criticized as absurd a system where young people could receive £18 a week from the Department of Employment while students on full-time education courses were being denied funds by local education authorities.

The union statement also urged closer cooperation between education and training agencies and a new administrative structure to "overcome the division between education and training".

The Education, Training and Employment of the 16 to 19 Age Group, a policy statement is available from the NATFHE, Hamilton House, Mabledon Place, London WC1. Price 35p.

AUT welcomes new medical grouping

The Association of University Teachers is prepared to discuss changes in the negotiating machinery for clinical teachers' pay and conditions with the newly formed Medical Academic Staff Committee (MASC), AUT general secretary, Mr Laurie Sapper, has said.

The AUT welcomed "the fact that the number of organizations purporting to represent clinical teachers has been reduced from three to two". MASC, which is being launched with a conference in Oxford next month, is the result of a merger between the British Medical Association's Full-Time Teachers and Research Workers Committee and the independent Association of University Clinical Academic Staff (AUCAS).

There has been some ... between AUT, AUCAS ... BMA over the representation of Britain's 3,000 or so medically qualified teachers and research ... But Mr Sapper said ... than 600 clinical academics ... anxious to arrive at ... working arrangement.

OU student costs are 'unlikely to fall'

by Sue Reid

The average costs per student at the Open University are unlikely to fall between now and the end of the decade. Even this predicted levelling out will only be achieved if there is a slowing down in the expansion of the range of courses offered, it was claimed this week.

But the average costs will still be only a quarter of those at conventional universities, according to a new paper by Mr Leslie Wagner, head of social sciences at the Central London Polytechnic and former research consultant at the Open University.

He points out that a change of policy within the Open University could bring about a reduction in average costs. The paper suggests that a shift of emphasis from science and technology to arts and social science courses would have a favourable impact on costs but rejects more radical cost-saving exercises such as the withdrawal of broadcasting.

Most of the economies of scale at the Open University had been reaped within the first few years of its operation. Since then it had followed the more conventional university pattern with little increase in productivity.

The paper, published in this month's edition of *Higher Education*, adds: "The major reason for the small fall in the average costs since 1973 is that the university has been using the economies from rising student numbers to increase the number of courses offered to students."

The university now proposed a final target of 87 full-credit equivalent courses by 1982 and it was the speed with which this target was reached that would determine the behaviour of average cost. If the university increased its production capacity to reach the target earlier than presently planned, costs would rise.

It might be possible to reduce costs at the Open University while maintaining the same basic system by changing the mix of courses. Calculations showed that while the average cost of producing a new course in the university as a whole was £436,000, the cost in different faculties varied between £301,000 in arts and £593,000 in science.

Using revised cost calculations for the Open University and conventional universities for 1973 the paper shows that there is a significant cost advantage to the Open University. It says: "Total recurrent expenditure at the Open University in 1973 amounted to £9.9m at 1971 prices. With 38,124 students finally registered this gives an average cost per equivalent undergraduate figure of £258."

In comparison the conventional universities' recurrent expenditure in 1973 was £332.3m at 1971 prices. Using new weightings indicated by the University Grants Committee this gave an undergraduate equivalent total of 292,130 and an average recurrent cost of £1,138.

Universities join housing for the young schemes

by Judith Judd

At least six universities are negotiating with housing associations to provide accommodation for students and single young people on university land. The negotiations follow a Government statement last March suggesting that university land should be made available to housing associations to help solve the housing problem among young people.

The universities which have already devised housing plans under the scheme include Sussex, Sheffield, Leeds, Manchester, University of East Anglia and Edinburgh.

The plans vary considerably. At Brighton, the university has been working with the local authority as well as the housing association. Though there are some legal difficulties to be sorted out, the university hopes to be able to go ahead shortly with 300 units for single people, mainly for students, but about 10 per cent will be for Brighton residents, probably single young people.

The local authority, which has a common interest in solving the housing problem in the town, will loan some of the money. The rest will come through the housing association. The university will manage the units on behalf of the housing association and will collect the rents.

At Manchester, the plans are different. The accommodation will be built on university land but the university has negotiated directly with the housing associations.

There are two schemes, one for married overseas students in a complex which is planned to have at least 50 per cent students, and another for a total of 373 people, 50 per cent of whom should be students. Work on the first will start before the end of the year and on the first stage of the second next year.

A spokesman said the university had acted in response to ministerial wishes. "In addition, it does give us some residences for students at a time when there is no University Grants Committee money for them." He said the university welcomed the idea of a mixed community of students and other young people.

Mr Peter Ashby, deputy president of the National Union of Students, said the encouragement of such schemes was one of the priorities of union policy. "We think that with the big decline in private rented accommodation students should be treated as part of the general problem of young homeless people."

Mr Ashby also said that the idea of more home-based students had been finally killed. The statement followed a meeting to discuss a study of student housing commissioned by the Department of Education and Science and carried out by lecturers at the University of Kent.

The meeting of DES representatives, local authority, university and polytechnic members considered the report, which rejects suggestions for more home-based students.

Mr Ashby said: "We are very pleased with the report and with the meeting. We feel the proposals for more home-based students have been sabotaged for good." The DES has not yet decided whether to publish the report but it is expected that it will now be sent to interested bodies.

Local control opposed by universities

The Committee of Vice Chancellors and Principals and the Association of University Teachers are both strongly opposed to Labour Party proposals that universities should come under local authority control.

The proposals are contained in amendments to the Labour Party's final consultative document for local government reform. Party officials confirmed this week that they have been approved by Labour's national executive committee (NEC) for incorporation in the final draft.

Lord Boyle of Handsworth, chairman of the CVCP, has recently expressed his belief in universities as national institutions, and his views are strongly endorsed by the rest of the committee.

Professor Stanley Dennison deputy chairman of the CVCP and vice-chancellor of Hull, said universities had always opposed such proposals, including the devolution of the Scottish universities.

Mr Laurie Sapper, general secretary of the AUT, said that the advocates of the proposal had no appreciation of universities' role or function, nor any idea as to the meaning of democratic accountability. It was understandable that schools should be accountable to local authorities since school populations were drawn from the area, and it was right that they should have some say in the resources available.

Universities, however, were national institutions drawing students from all over Britain and abroad, and their accountability should be to the country as a whole through the University Grants Committee.

He added that unlike schools, technical colleges and polytechnics, universities were major research centres, contributing to the advancement of knowledge on a national and international scale.

The consultative document, expected to be released next week, will go to this year's Labour Party conference. An executive statement will then be prepared for the conference the year after.

Mr Freddie Green (left) presents a cheque for £45,000 to Mr Roland Cookson for Newcastle University's development trust.

Medical research 'doomed without private money'

Medical research in this country is doomed without funds from private sources, the dean of medicine at Newcastle University said last week.

Professor John Walton, a member of the Medical Research Council, said the National Health Service and the MRC could not provide enough money for medical research.

Professor Walton's warning came as a £45,000 cheque to further Newcastle University's research into kidney disease was presented to Mr Roland Cookson, chairman of the University's Development Trust by the chairman of the Northern Counties Kidney Research Fund, Mr Freddie Green.

The fund, which has raised £170,000 in six years for kidney research in the northern region, is endowing a first assistantship in nephrology at the university.

It has already collected a further £20,000 towards the additional £45,000 required to turn the assistantship into sponsored lectureship in renal research. Mr Green said the lectureship will ultimately replace the temporary research fellowship currently financed by the fund.

"If renal research is to have the maximum drive and continuity, it is likely to be better served by a permanent research appointment at the university. This will provide security and continuity for the holder of the post. With the facilities of the university and the support of research students, more comprehensive facilities for long-term research will be available", he said.

NERC warns that competition for awards will be tougher

Competition for awards from the Natural Environment Research Council is likely to be considerably stiffer this year than last, the council warns in a report on postgraduate training published this week.

Demand from universities, polytechnics and research institutes has increased in recent years, it says. In 1976 there were 1,048 applications for 280 research studentships tenable in universities and polytechnics, 42 applications for 15 institute-based studentships and 319 applications for 187 advanced course studentships.

Demand was expected to increase this year because of the increase in postgraduate tuition fees. The NERC was unable, however, to find the extra funds to meet the expected extra demand. The most that could be expected was to offer the same number of new studentships as last year.

An applicant with a first degree below an upper second-class could not be accepted for a research studentship, nor would less than a lower second be accepted for an advanced course studentship unless there was clear evidence that the first degree result was unrepresentative of his ability.

Last year, 66 per cent of advanced course studentships went to students with upper seconds; 40 per cent went to those with firsts ... for research studentships 28 per cent had first and only 1 per cent less than an upper second.

The NERC says that while it is important to provide highly trained environmental scientists it does not support a very close fit between supply and demand. For this reason, it did not change the number of studentships available each year in response to "contemporary fluctuations in the job market". Another factor was that postgraduates in environmental sciences were supported by other bodies as well as the NERC; in geological sciences the NERC supported only about half the total research student population.

But it was trying to meet the changing and varied needs of industry. First, its grants committees included members from industry—at present three were from private industry and five from the public sector on the four grants committees concerned with postgraduate training. Second, industry was playing a part in reviewing courses, such as in engineering geology, hydrology and photogrammetry and surveying.

A third way of relating training policy to industrial needs was by holding discussions between representatives of higher education, the public sector and industry.

Postgraduate Training in the Sciences of the Natural Environment, from the Natural Environment Research Council, Alhambra House, Charing Cross Road, London WC2.

Single vote swings Bradford decision

Bradford Council has accepted the Government's view that teacher training should be retained at Ilkley and not Bingley College. An emergency meeting of the council took the decision last week by 36 to 35.

The council also agreed that teacher training should be retained at Bradford College. Earlier this year it voted to defy the Government and to end teacher training at Bradford while continuing it at Bingley and Ilkley.

In its list of college closures published in June the Government said the council could choose between Bingley and Ilkley providing that its decision ensured the continuance of home economics now sited at Ilkley.

Mr Richard Knight, Bradford's director of educational services, said some courses from Bingley would be transferred to Ilkley.

Poly grants committee urged

A polytechnic grants committee for polytechnics and many colleges with a proportion of advanced further education work is needed, according to the Association of College Registrars and Administrators.

The association's council took the decision at a recent meeting to determine policy on the finance and management of higher education being considered by the Oakes committee.

It agreed that polytechnics and many other colleges doing advanced further education work should remain under local authority control but felt there was a need to establish a national body to formulate policy and control the distribution of funds.

The council saw an urgent need to give colleges doing a significant amount of advanced further education work a greater degree of autonomy in the way they spend their money.

It thought that local authorities should subscribe to the funds distributed by the national body on a "poolable" basis and the cost of running advanced level courses should be 100 per cent poolable as at present.

Such a body should rationalize courses and avoid duplication so that colleges had to deal with fewer organizations ...

To achieve these aims, the council would like the governing bodies of polytechnics to be strengthened. It feels that there has been a shift away from college autonomy towards greater local authority control.

Colleges of higher education and those with a significant amount of advanced work should have the same degree of autonomy as polytechnics.

The council wants colleges to be accountable to the national body as well as to the local authority. It also wants governing bodies to have greater control over internal spending provided they do not undertake any continual commitment without the approval of the local authority.

ACRA's view is by no means shared by all members of the Oakes committee. The committee includes those who are anxious for local authorities to retain their present control and those who favour a regional solution.

The committee, which is expected to report in the autumn also has to decide where further education ends and higher education begins.

Libraries given adult guideline

Libraries and adult education bodies should share a common interest in helping students and other readers to develop their potential, according to a new set of guidelines on cooperation published this week by the Public Libraries and Adult Education Committee for the north west.

The guidelines maintain that public libraries are eminently suitable locations for mounting publicity about adult education. They are also admirably fitted not only to encourage inquiring adults but to house their classes.

The committee says: "Adult education bodies should provide librarians with information about their courses so they can offer a comprehensive service to the public about subjects, meeting places and enrolments."

Posters, leaflets and other related material could be displayed and an advisory service in libraries with an element of counselling might be offered at the beginning of the academic session. This should involve adequately trained staff and would ideally be the responsibility of adult education liaison officers on library staffs.

"Public libraries with a tradition of equality, openness and non-directive assistance are admirably fitted not merely to encourage inquiring adults but to house their classes. Course work, like reference use, can be regarded as a progression from leisure reading which libraries should facilitate."

Guidelines for Cooperation, produced by the North West Public Libraries and Adult Education Committee, is available from the honorary secretary, PLAEC, care of the WEA, 39 Bluecoats Chambers, School Lane, Liverpool, price 40p (including postage).

1978 training target 'should be 9,450'

The 1978 intake to three and four-year teacher education courses should be 9,450, the Government said recently. The figure, first given in *The THES* last month, includes any January, 1979, intake but not part-time students on initial training courses.

Within the 1981 total the Department of Education and Science has assumed that about 22 per cent of the places will be devoted to induction and in-service training. The total number of training places in 1981 will be 46,670.

Admission targets for 1978 for all institutions have been sent to local authorities and governing bodies of voluntary colleges.

A memorandum sent out with these letters shows that the most recent evidence of national average rates of wastage indicates a total figure of 18.5 per cent of the original intake. In the first year it is 9.5 per cent, in the second 4.5 per cent and in the third and fourth 4.5 per cent.

This means that output targets have been suggested which are 20 per cent lower than the corresponding intake targets.

Colleges which admit students to courses that may not lead to a teaching qualification have been advised to regulate options available to students so that they can keep as close as possible to target.

The Government has also made its long-awaited announcement that the certificate of education should be phased out. Mr Oakes, the Minister of State for Higher Education, told the Commons last week that the last entry for the certificate should be in 1979-80.

Mr Oakes said that an entry to one-year shortened certificate courses for those with specialist qualifications in craft, design, technology, music and business studies should continue up to and including 1983-84.

The DES will consult local authorities, colleges, universities and teachers about the details of implementing the decision.

Anti-cuts week planned by CEA

The Council for Educational Advance, the broadly based pressure group opposed to cuts in education spending, is to hold its second National Education Week (NEW) between October 17 and 23.

Guidelines have been sent out to the council's 45 affiliated organizations and local groups suggesting activities for the action week. These include school and college open days, petitions, teach-ins, public meetings and lobbying local councillors. Nationally, the council is to set up a panel of education personalities to take part in local brains trusts.

The week will culminate with an "education Sunday", when the theme of the week, it is hoped, will be taken up in sermons, prayers and Sunday school lessons.

The council currently has local centres in Haringey, Manchester, Brent, Gravesham, Coventry, Leicester, North Warwickshire, Rugby, North Hertfordshire, Nottinghamshire, Derbyshire, Corby, Hackney and Harlow.

The council's secretary, Mr Henry Clother, said: "Last year, we were amazed at the widespread activity which was spontaneously organized by little groups of enthusiasts. This year, we are trying to build on that and develop a grass-roots protest movement."

More study urged into oil, coal and gas industries.

Bigger role in energy industry proposed for social scientists

by David Walker

Social scientists should play a bigger role in gathering knowledge about the oil, coal and gas industries and in commenting on official energy policy, according to a Social Science Research Council report.

The report, compiled by Mr Michael Posner of Pembroke College, Cambridge, for the council's research initiatives board says the focus on energy stimulated by the Arab oil embargo in 1973 will not suddenly stop.

"Certainly energy is judged to be of continuing concern in most other advanced countries and the effort put into energy studies by highly respected institutions in both the United States and Western Europe is substantial. A modest but significant switch of resources into energy studies over the next few years therefore seems to us desirable," the report says.

Mr Posner is an economist and though aided by members of the SSRC's ad hoc energy advisory committee containing natural scientists, political scientists and others the contribution of his discipline is seen as vital.

For example, work needs to be done on the elasticities of substitution between fuels—at what point, say, a householder would consider changing from gas to electricity. Economists should examine the impact of tariffs on the use of fuels and develop the theory of resource depletion.

Other disciplines have a role. Political scientists should devote attention to the multi-national oil firms and the energy balance as a factor in international relations. Academics of all disciplines have a bigger role to play in the public debates over the siting of power stations or developing new coal fields.

Mr Posner sees the SSRC's role as attempting to plug some of the gaps in existing knowledge. The SSRC could act as a broker with the nationalized industries and the oil firms to secure for social scientists access to information.

It has a wider role in encouraging the growth of informed public opinion about matters of energy policy. Much work was being done behind closed doors in the oil companies and the various departments of government but, the report said, "we believe the SSRC has a role in helping to ensure that some policy studies do take place in the public domain, in the universities and research institutes, so as to help in the formulation of intelligent and democratically acceptable policies."

It recommends liaison with the Science Research Council, with the North Sea oil panel of the SSRC, its pollution panel and bodies such as the Harwell Energy Technology Support Unit.

Energy Topics in the social sciences, from the Social Science Research Council, State House, High Holborn, London WC1R 4TH.

Education colonization 'is past'

An emulation of the British education system may have served the Commonwealth well in the past but the days of colonialization were over, Mr David Young from St Helena told the recent Commonwealth Youth Conference.

Mr Young, speaking at the Commonwealth Institute, Kensington, was summing up the views of delegates who had looked at the question of education and development.

"Many countries of the new Commonwealth have had to readjust their educational systems, some not so successfully, perhaps, but they have woken up to the fact that new aims and objectives are to be realized in order to fulfil their own basic needs and requirements", he said.

"All too often in the past, British educational curricula have been adopted without the environmental social and cultural differences, as well as the many problems which exist in these particular countries, being taken into account."

For many of the Third World countries basic survival meant no formal kind of education. Their education would take place in the home and fields. Schools for many proved too expensive, did not provide the means for immediate livelihood and existence, and sometimes were not available even if required.

Although changes were being made to the systems of education in Commonwealth countries they still looked to Britain for ideas and it was necessary for many overseas students to study here. "We feel that fees as they stand at the moment are very unfair."

Education and development was one of six topics discussed by nearly 200 delegates from 45 Commonwealth countries at the two-day conference.

Applicants think biggest is best, guide says

by Judith Judd

Students applying to universities appear to think that biggest is best, according to a guide to degree course offers.

Degree Course Offers, 1977-78, the latest in Mr Brian Heap's surveys of higher education entry qualifications, shows that after Oxford and Cambridge, Edinburgh is the university able to demand the highest A-level grades. Bristol, Durham, Leeds, Manchester, Liverpool and Birmingham are joint third. After this come Bradford and Newcastle.

Of 96 universities and colleges included in the survey, 58 have at least one department able to ask the highest grade in one subject. Twenty-five can ask the highest grade in four subjects or more.

The book shows marked differences in the universities' approach to applicants and for the first time some have been persuaded by Mr Heap, a careers adviser in a secondary school, to give policy statements about their admissions procedures.

Universities which will interview applicants regardless of the position in which they are placed on the application form include Lancaster, East Anglia, the University of Wales Institute of Science and Technology, Keele and Hull.

In geography, applicants of "average" potential who put Bristol, Durham, Leicester, Liverpool, Newcastle and Southampton as first and second choices received rejections. Offers in the same subject were made by Salford, Swansea and Aberystwyth to "average" candidates placing them third, fourth and fifth.

There are variations in practice between universities in most subjects. In history, Durham and Glasgow will not accept general studies as an A level but Manchester will.

There are also differences over interviews. In chemical engineering, for instance, Loughborough normally makes offers without an interview, whereas Birmingham interviews everyone.

The subjects which are booming include law, medicine, psychology, veterinary science, history and mathematics. Those which are struggling include mining engineering, ceramics, polymer chemistry, material science, aero-engineering, colour and applied chemistry.

Mr Heap said last week that there had been a general upward shuffle in the A-level grades required for law. Durham was now asking for an A grade with a B and a C. Pharmacy and psychology had also been able to increase their entrance requirements.

The popularity of medicine continued with medical schools at Aberdeen, King's College, London, Belfast, Nottingham, the Royal Free Hospital, London, Westminster and Dundee all increasing their entrance demands.

In some subjects, the book shows that polytechnics can match universities in their demands. Leeds Polytechnic requires the same grades as some universities for its accountancy course and Brighton and Liverpool polytechnics can do the same for pharmacy. In general, however, the standard required is still lower.

Mr Heap said that one change he had noted was that more universities were making standard offers rather than those tailor-made for a particular candidate. "There is an increasing tendency for all-comers to be asked for three C grades irrespective of subject."

In the past, information for Mr Heap's guide has come mainly from schools and applying students. For the latest edition, 36 of the 96 institutions approached have supplied information.

Degree Course Offers, 1977-78, by Brian Heap is published by Careers Consultants Ltd, 12-14 Hill Rise, Richmond Hill, Richmond, Surrey, price £3.50.

TUC says access problem has not been tackled

The Government has failed to tackle the problem of promoting access to higher education, the TUC says in its comments on the Green Paper on education.

The TUC regrets that "the Government has not taken seriously the problem of promoting an alternative form of access to higher education for those who could not be expected to compete for entry on leaving school but who could, in later life, benefit from a course of further and higher education".

It supports the view that education is a necessary condition for the creation of a modern technological society but says this is in no way reflected in the provision of the adult education services. "Apart from the Open University, most opportunities for further and higher education are closed to adults because they do not succeed at school in obtaining the necessary CCE qualifications."

The TUC response to the Green Paper also calls for the payment of mandatory educational maintenance allowances for children wishing to continue in full-time further education after leaving school.

On the training of teachers, the TUC says that improvement of teaching standards by induction and in-service training cannot be achieved without more resources.

It welcomes the recognition of the principle that substantial numbers of teachers should be recruited from among mature men and women. In the past, the TUC says, the Government has recruited mainly 18-year-olds who are cheap to train and employ.

Non-teaching staff press for review of recurrent grant

The 60,000 non-teaching staff employed in Britain's universities are pressing the University Grants Committee and the Department of Education and Science for a full review of the recurrent grant for the coming academic year.

A deputation from the joint Universities Committee for Non-Teaching Staff has already met DES officials and the Committee of Vice-Chancellors and Principals to discuss the issue. It is now to have further talks with the UGC and Mrs Williams, the Secretary of State for Education and Science.

The committee, which represents the National Union of Public Employees, the National and Local Government Officers Association, the Transport and General Workers Union, the Amalgamated Union of Engineering Workers, the Union of Construction and Allied Trades, the General and Municipal Workers Union, claims that there will be a cut in real terms of at least 1 per cent in the current grant for the coming academic year, 1.7 per cent more than the latest figure estimated by the CVCP which is expected to call for a comparable grant in September.

A spokesman for the unions warned that unless both the UGC and the DES were the non-teaching unions would bring strong pressure to bear. She maintained that there had been no consultation with the unions over the 1977-78 grant.

The spokesman said the deputation also planned to discuss the 1978-79 recurrent grant level at UGC and DES meetings.

Adult fees to rise

Fees for adult education classes are expected to rise by 85 per cent in the coming academic year, according to a new survey of local education authority charges by the National Institute of Adult Education. It shows that authorities taking part in the survey will on average charge 77p per two hour meeting compared with last year's average of just 41p.

Grant to go round

Southampton University has been awarded a £190,000 Science Research Council grant to investigate rotating electrical machines. The grant, which will be administered by Professor Percy Hammond, and Mr Ken Binns, covers three areas of research: Electromagnetic aspects of electromechanical drives, new industrial drives, new ... magnetic problems of stator cores.

Don's diary

Thames valete

Well, it is over. At a brief, informal gathering the other day, sandwiched between two examiners' meetings, the ending of nine years' employment at Thames Polytechnic was symbolically underlined by some of the farewell gifts that were presented to me.

The choice could hardly have been more appropriate: records of Mozart's four last piano concertos, and Guilini's magnificent recording of Verdi's *Requiem*.

The farewells, in fact, had been flatteringly numerous in the previous weeks. Groups of my undergraduate students had taken me out to lunch, to the theatre, and to supper. Colleagues and students on the historiography MA course gave me an excellent dinner in the last week of term. All this, and yet somehow I was allowed to escape without the final ordeal of having to make a farewell speech.

Farewell ceremonies and examiners' meetings over, all that remained was to pack the books in my office into all the cartons I could lay my hands on and ruthlessly sort through nine years' accumulations in my filing cabinet.

I take up my new appointment at King Alfred's College of Higher Education, Winchester, next month, but since Easter I have been spending some time there each week while still continuing at the polytechnic. My predecessor at King Alfred's left at Easter so since then, with loyal assistance, I have had to keep the administrative side of my new department ticking over.

Almost immediately after accepting my new post I took part in the appointment of two new members of staff for next session and subsequently I have attended a steady stream of committee meetings and planning sessions. Although I have not yet done any teaching there, I have found time for discussions with individual students.

The same sort of dual existence will operate next session since I have been appointed associate lecturer at Thames and shall be finishing a course on the historiography of the English Revolution with the part-time MA students. I run the risk of becoming a hardened pluralist.

At one level, perhaps, a change of post scarcely makes any difference to scholarly routines. Some academic commitments continue irrespective of one's particular institution—research and writing, reviewing, CNAA membership, and in my own case, links with *Literature and History*, the *Economic History Review* and so on. One feels part of a community much wider than one's immediate colleagues.

And at a very different level, compared with the accompanying traumas of buying and selling houses, the change of post itself at times seems to subside almost into a non-event.

I know, as well as anyone, of course, that the institution, the job, the academic environment, and the opportunities its creates do matter, and that higher education is riddled with disparities, with inequalities, and with layers of snobbery.

I remember how an Oxbridge don who once visited us at Thames to give a lecture put forward his view that historical research ought to be concentrated solely in the two ancient universities.

Some representatives of provincial universities, on the other hand, though they are denied access to the same divine right theory as the Oxbridge don, claim at least the right to lord it over polytechnics.

Polytechnics themselves, however, can be just as snobbish and condescending. With painful experiences of enforced mergers behind them, polytechnic staff sometimes consider themselves as self-evidently superior academic beings to all their counterparts in colleges of education.

I sensed something of this attitude in the surprised reactions of some of my colleagues when they learned that I had accepted the headship of a department in a former college of education. Like Milton's Satan I had cut my losses, it seemed to them, and decided to reign in hell rather than continue to serve in heaven.

While not subscribing to these rigid views of the academic world order, I recognize, of course, that the two institutions with which I am now linked are different both physically and sociologically and that they are at different stages of development.

The main era of degree planning at Thames was in the late 1960s and early 70s when the polytechnic was engaged in the full-scale exercise of emancipating itself from its tutelage to the University of London and of opting for the greater autonomy offered by the CNAA.

At Thames I was in at the start of the first polytechnic humanities degree in 1969 and for several years dealt with admissions; in those pioneering days we used to receive anything up to 1,000 applications, mainly—it must be admitted—since there was so little competition from other institutions.

Real past

On the academic side, a heavy commitment to teaching first-year courses on the nineteenth and twentieth centuries usefully prevented me from becoming a narrow specialist. (My postgraduate research had been on sixteenth and seventeenth-century regional history.) As the humanities course got under way, however, it provided me with opportunities to develop new teaching and research interests in historiography.

There are still some historians who argue that students should concentrate only on an attempt to come to terms with the "real" past and that they should not get side-tracked into unproductive thinking about the factors which control changing perceptions of it.

At Thames, however, we felt differently, and in a way made history ourselves by allocating historiography such a major place in our students' part two courses. Historiography was seen not simply as a separate course in its own right, but as one which in a meaningful way helped to underpin the whole history package in part two.

Another development at Thames which I look back on with particular satisfaction was the launching in 1975 of the new journal *Literature and History*. This arose out of the issues raised by cross-subject teaching in the school of humanities, and the journal is edited jointly by a small team of literary specialists and historians.

Concerned above all with the relationships between the two disciplines (though to a lesser extent with internal developments in each), the journal is establishing an identity of its own and is beginning to build up an international as well as a national reputation.

The list of subscribers continues to grow and the influx of articles submitted to us steadily increases. The polytechnic directorate is rightly proud of this particular offspring.

King Alfred's College, with a string of degree courses newly validated by the CNAA, is now in process of changing its identity and is set to build up a new image and a new reputation appropriate to a diversified college of higher education.

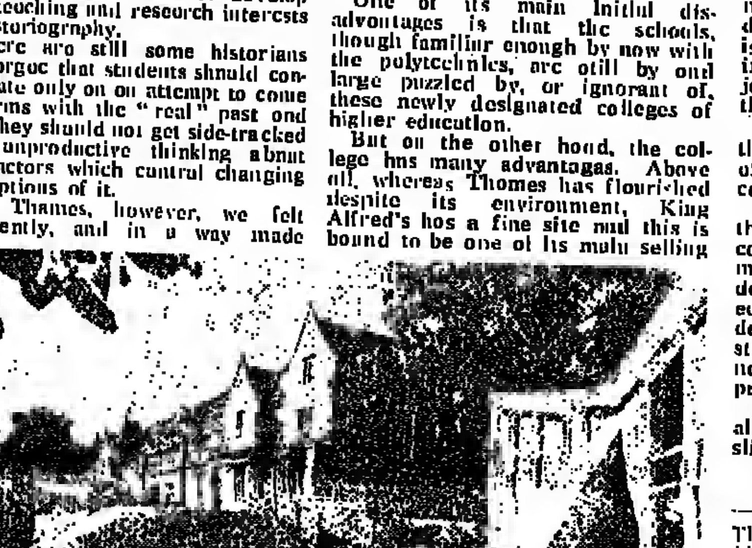
One of its main initial disadvantages is that the schools, though familiar enough by now with the polytechnics, are still by and large puzzled by, or ignorant of, these newly designated colleges of higher education.

But on the other hand, the college has many advantages. Above all, whereas Thames has flourished despite its environment, King Alfred's has a fine site and this is bound to be one of its main selling points with students. Its facilities are excellent and it has a lively campus.

Plays and recitals—rare events at the polytechnic—are a regular feature of college life at King Alfred's (which boasts its own theatre). The main attraction last term was an open-air college production of *Twelfth Night* performed at Mottisfont Abbey, near Romsey. A highly successful production of *The Prime of Miss Jean Brodie* was recently presented at the college.

It has a rapidly growing library in new purpose-built accommodation, and it has some able and energetic staff. Its small size will be an additional attraction for many, although I still find its cosiness and compactness slightly claustrophobic.

All staff, whatever their departments, actually seem to know each other—an unheard-of situation in the larger and more impersonal structure of polytechnics.


King Alfred's College of Higher Education.

Minipoly

While being in one sense a kind of "mini-polytechnic", the college has the opportunity and the resources not simply to ape the polytechnics but to do something distinctively different.

For instance, in my own department, one of the most promising developments at present under way is the planning of a joint degree in history and archaeology (a subject still virtually unrepresented in the CNAA degree world).

On a broader front, plans are in their early stages to launch a series of research papers on contexts and connexions in the humanities.

But planning new ventures, though exhilarating in itself, is of course simply a preliminary. It is much easier to theorize about new development than to initiate them, easier in some ways to devise new degree courses than to attract students to them, and easier to plan new courses than to cope with the problems of running them.

Much of the real work still lies ahead; it is an exciting though slightly daunting prospect.

R. C. Richardson

The author was senior lecturer in history at Thames Polytechnic and will shortly take up appointment as head of the history department at King Alfred's College of Higher Education, Winchester.

A week for wastepaper and 'swans'

Bryan Davies

Monday: "You'll only survive this job with a large wastepaper bin and total commitment to filling it", said an experienced northern member with whom I shared an office on first entering the House of Commons.

After three years my secretary and I demolish the morning postbag with a practised efficiency whose key component is a capacity for instant judgment on what is rubbish. Hence the daily ration of circulars, annual reports and monthly bulletins from obscure but impure organizations is fed to the voracious maw of our friendly beast. Lobbies and engagements are disposed with similar speed; all too often, however, the date and venue are crucial factors and only interfere with the subject on which I am committed to speak looms large in my consciousness.

Finally, come the constituency cases whose complexity often requires accurate probing to evoke the right response. Saturday's surgery has produced the usual crop of these. The art lies in getting the first letter right so that satisfactory results are obtained with a minimum of subsequent correspondence.

Despite, in many cases, the long journeys from distant constituencies there is a respectably sized House for questions on Industry. Although question time is much decried as an institution, it is far from being without value. Ministers, of course, are rarely embarrassed: a weak case has to be badly mishandled before backbenchers draw blood.

Nevertheless, the major issues of contemporary debate are always reflected in the questions and it provides a useful short cut to topical political literacy. Members after all cannot afford to specialize to the extent that the broad sweep of controversial issues is totally neglected.

By mid-afternoon the Finance Bill is safely launched into another session, with a long night ahead for the majority of members subject to the three-line whip. Eight members of the Select Committee on Overseas Development are among the privileged few granted release, bound for Europe on what their meaner spirited colleagues would call "a swan".

A quick glance at the itinerary confirms that this particular trip is more likely to resemble the original ugly duckling. A day and a half at the Brussels Commission is topped out with a flying half-day visit to Geneva. The eight weighty briefs confirm the fun we are due to have. Nevertheless, dinner late that evening in a small restaurant hard by the Grande Place accompanied by music from an impromptu group of folksingers in the street outside proves infinitely preferable to Westminster's packed division lobbies and that long drive home.

Tuesday: Our party descended upon the Berlaymont, home of the commission, consisting of five believers of varying levels of conviction and three heretics. Nothing which was to transpire over the next day and a half would be likely to affect such hard won convictions to any significant degree although useful insights were gained into the Common Market policies for the Third World.

Buttressed by many months of study of the complex relationship between aid and trade in a British context, the committee entertained no illusions that the commission would provide convincing solutions to the difficult problems involved. Maurice Foley, formerly Minister for Overseas Development in the United Kingdom in the 1960s, was our host and marshalled a team which responded positively to our many probes.

In the commission the all-pervasive principle of the lowest common denominator fudged the issue of ... tribution gave hope for the future. M La Croix, a Belgian economist, presented a clear analysis of the possibilities in a field sadly neglected in European politics in the past. The only strategy to prevent advanced economies lapsing into crude protectionism in the face of rapidly developing industrial power in certain Third World countries must be one based upon regional development.

If textile production is to be replaced by concentration on the export of high level technology and machine tools, then the new developments must be precisely in those areas where jobs are threatened.

Dinner at the British Embassy followed the familiar pattern of these occasions. The bulk of the evening is dominated by political small talk and the civilized exchange of generalities. There are always one or two guests, however, who are eager to talk sharper politics and run the usual risks of misunderstandings.

An African ambassador produced a vigorous defence of Amin's Uganda's president portrayed as the man who had routed the neo-imperialists and had advanced the cause of Africanization sounded a dated perspective to several of us but it was made clear that he still had much political credit upon which he could draw in Africa.

European criticism merely reinforces his position. Should African pressure be exerted, it would be in ways scarcely discernible in Europe. Black Africa wants no solution through white man's power.

Wednesday: The Lomé agreement and the enlargement of the community were the focal points of the morning's discussions. The weaknesses of Lomé several years on were clearly revealed in the analysis. Tariff concessions and quotas are valueless to the Third World while chronic problems of production ensure that quota targets are not reached in many cases.

Moreover, the community's emphasis on Africa came through clearly ... areas by Arab money, throws into sharp relief the bleak prospects of support for the Indian sub-continent, the hardest hit of all economies by the past four years of crisis.

The possible enlargement of the community to include Portugal, Spain and Greece has crucial implications for the Third World. I share the view of most British socialists that enlargement is greatly to be welcomed. It will reduce Europe's tendency to be the rich man's club with federalist pretensions, in addition to buttressing the recently won democracy of the new members. How preferential concessions will be sustained for Third World countries when similar economies exist within the community is nevertheless a matter of the greatest concern.

Geneva in high summer has a depressing quality. The *Palais des Nations* despite its superb modern wing is a mausoleum to a bygone age. The failure of the great dream of the League of Nations hangs heavy on a building relegated to the overspill from headquarters in New York.

Thursday: London and a harsh realities. The meeting of the Medical Research Council on which I serve as the sole House of Commons representative was picketed by unions concerned at the closure of a research unit at Newcastle. I thought the staff case was a good one and advanced their arguments as vigorously as possible in the meeting. The debate was precise and intensive: others shared my misgivings but the majority in favour of closure was a clear one.

The Council will face more of these tough decisions unless it comes to terms with factors still largely unappreciated. Flexibility in opening and closing units is drastically reduced as universities offer no soft cushion for redundant staff. There is a great need for a coherent manpower and training strategy.

Moreover, the Medical Research Council pays only lip service to concepts of academic and industrial democracy. No one doubts that the highest level of scientific expertise is a necessary element in the appointment of directors of major research units. Equally clearly units employing significant numbers of qualified people have responsibilities wider than the priorities of the top scientist. Universities have taken some steps to come to terms with the legitimate interests of those below the professoriate: the Medical Research Council has much further to go.

A dash to the house to hear Shirley Williams introduce her Green Paper in a statement whose unusual length is criticized by the Opposition. They contend that they have had too short notice to be able to respond with the precision they would like.

Some of us on the Government backbenches thought that the contents were so predictable that our lines of questioning had already been well rehearsed. I thought we were proven right. Both Norman St John-Stevas and Rhodes Boyson stayed faithful to a Conservative script several months old; so did some of our side.

The author is Labour MP for Enfield North.

NOTICE BOARD

Chairs

Dr G. E. Alizon, lecturer in statistics at the London School of Economics and Political Science, has been appointed to the Leverhulme Chair of Econometrics at Southampton University from October 1, 1977.

Dr Richard Hugh Shiels Mindham, reader in psychiatry at Nottingham University, has been appointed to the Nuffield Chair of Psychiatry at Leeds University from October 1, 1977.

John Gordon Beckwith, keeper, department of architecture and sculpture, Victoria and Albert Museum, has been appointed to the Slade Professorship of Fine Art at Oxford University for the academic year 1978-79.

Dr T. F. Hawkes, senior lecturer in the department of English at University College, Cardiff, has been granted a personal chair.

Noticeboard is compiled by Patricia Santinelli and Pauline Downs

Appointments

Universities

Leeds

Senior lecturer: Andrew David Claydon (community medicine and general practice). Lecturers: Terence Harry Atkinson (fine art); John Peter Fitch, Michael Barry Smyth and William Finlay McColl (computer studies); Robert Gee (metallurgy); David Adil S. G. Mary (cardiovascular studies); Malcolm James William Povey (food science); Mansel Gilwern Spratling (archaeology). Research fellows: Christopher Leslie Beadle (plant sciences); Veronica Coley (biochemistry and psychiatry); Stuart Foster Jagger and Nicholas J. Schofield (geography); C. L. Saluja (chemical engineering); C. J. Latham (psychology). Senior visiting fellow: J. Overend (physical chemistry). Temporary lecturers: Edward Henry Greenwood (Nuffield Centre for Health Services Studies); Susan Jane Allen and Alan Fletcher (English); Gregor Benton (Chinese studies); Jeffrey Haywood (biochemistry); Geoffrey William Dixon and Valerie Woodyat (law); John Malcolm McArthur (earth sciences); Sally Medlyn (fine art); B. B. G. Nelson (microbiology).

London

Royal Postgraduate Medical School Secretary, Mr Michael Brightley.

Oxford

Lecturers: R. H. Barnes (social anthropology); G. D. W. Smith (metallurgy and science of materials); C. J. Danby (physical chemistry); A. C. G. Cuello (neuroanatomy and neuropharmacology).

Southampton

Senior lecturer: Dr B. J. Leppard (dermatology). Lecturers: Dr C. E. Bennett (biology); Miss S. R. E. Prickett and Mr S. J. Saxby (law); Dr A. L. Thomas (physiology and biochemistry); Dr P. D. Maguire (radiology); Dr A. D. Crawford (medicine); Dr P. E. Conde (pathology); Dr D. S. K. Brookfield (child health); Mr G. C. Bennet (orthopaedic and accident surgery).

Wales—Cardiff

Promotions to reader: Dr F. D. Pooley (mineral exploitation); Dr Norman Tudball (biochemistry).

Fellowships

At the annual general meeting of the British Academy, Sir Isaiah Berlin was reelected president.

Fellowships have been conferred on: Dr S. P. Brock (biblical studies); Professor S. G. Checkland (economics); Professor I. R. Christie (modern history); Professor J. N. Coldstream (archaeology); Professor R. Dahrendorf (social studies); Professor C. J. F. Dowsett (Armenian studies); Professor J. Gottmann (human and urban geography); Professor J. A. G. Griffith (jurisprudence); Professor J. R. Hale (Italian renaissance studies); Professor R. H. Hilton (medieval history); Professor J. B. Joll (modern history); Miss Kathleen Major (ecclesiastical history); Professor P. Mathias (economic history); Mr P. R. S. Moorey (archaeology); Mr L. B. Nicolson (history of art); Mr L. B. Nicolson (papyrology); Mr A. M. Quinton (philosophy); Professor P. E. L. Russell (Spanish studies), Professor A. K. Sen (economics); Mr G. H. Treitel (jurisprudence); the Rev Professor R. M. Wilson (biblical studies); Professor B. S. Yamey (economics).

The following corresponding fellows were elected: Dr P. Bastien; Professor H-G. Beck; Professor M. de Bouard; Professor B. Havránek; Professor C. E. Dr W. Flume; Professor L. Grodecki; Professor B. Havránek, Professor C. G. Hempel; Professor V. V. Ivanov; Professor S. Iwao; Professor T. Jacobsen; Professor W. Jaffé; Professor Dr M. Kaser; Professor Dr H. Kellenbenz; Professor E. Labrousse; Professor D. Landes; Dr V. A. Livshits; Professor Y. M. Lotman; the Rev J. Meyendorff; Professor T. W. Moody; Professor Edith Porada; Professor E. H. Riesenfeld; Professor C. Serizawa; Professor J. R. Strayer; Professor C. Violante; Dr Paola Zancani Montuoro.

Forthcoming events

A workshop on "Programme Design Techniques" will be held at UMIST from September 13 to 15. The aim is to study the use of structured programming techniques to avoid data processing problems and unreliable programme writing. The workshop is intended for programmers with at least one year's experience. Course fee: £65. Details from the Registrar, UMIST PO Box 88, Manchester M60 1QD.

* * *

"Library Management and Library Management Research", the fourth international seminar of the Library Management Research Unit, will be held from September 13 to 16 at Loughborough University. Further details from the course director: J. L. Schofield, director, Library Management Research Unit, department of library and information studies, University of Loughborough, Leicestershire LE11 3TU.

* * *

"Survival in management" a residential conference for young engineers heading for management positions has been arranged by the graduate and student section of the Institution of Electrical Engineers to be held from September 9 to 11 at Westfield College, University of London. Fee: £25. Further details from Colin Saywood, 45 Chapel View, South Croydon CR2 7LJ.

Open University programmes August 13 to August 19

Saturday August 13

BBC 1

7.15* Computing and computers: Systems Analysis (P3195) ; prog 9).
7.40* The sociological perspective: Secularisation (D283 ; prog 8).
8.05 Personality and learning: Education in Trinidad (E201 ; prog 12).

BBC 2

7.40 Man-made futures: design and technology: Design Strategies (T262 ; prog 9).
8.05 Making sense of society: Power in Society, San Francisco Bay Area: Hapid Transit: "Assembling the Power Structure" (D101 ; prog 28).
8.20 Technology foundation course: Traffic Control (T100 ; prog 31).
8.55* Environmental control and public health: Is music Noise? (PT272 ; prog 5).
9.20 Topics in pure mathematics: Turing Machines and Post Systems (M302 ; prog 25).
9.40* Introduction to engineering mechanics: The Laws of Thermodynamics Part II (T231 ; prog 11).
10.10 An algorithmic approach to computing: String Processing (M251 ; prog 8).
10.35 Integration and normed spaces: Convergence and Normed Spaces (M331 ; prog 7).
11.00* The Nature of Chemistry Part 2: The Transuranium Elements (S304 ; prog 27).
11.25* Images and Information: The Surface of Mars: A Case Study (ST291 ; prog 2).
11.50 Biochemistry: Purification of an Enzyme (S2-1 ; prog 2).
12.15 Industrial relations: "Bloody Good Colliers" (P881 ; prog 3).
12.40 Problems of Philosophy: Laws of Nature and Explanation (A303 ; prog 6).
13.05 Linear mathematics: Boundary Value Problems (M201 ; prog 26).
13.30 Microeconomics: Income Distribution (D323 ; prog 7).
13.55* Elementary mathematics for science and technology: Buckling (MST281 ; prog 12).
14.20* Principles of chemical processes: Rates of Chemical Processes (ST294 ; prog 12).

RADIO 3 (VHF)

8.05 Drama: Music in Brecht's "Mother Courage" (A307 ; prog 17).
8.25 Systems modelling: For or Against Cost Benefit Analysis (T341 ; prog 27).
8.45 Mathematics foundation course: Differential Equations (1) (M100 ; prog 24).
7.10 Arts foundation course: History and Authenticity—Charles Cudworth talks about Handel's "Messiah" (A100 ; prog 27).
7.30 Science foundation course: Revolution in Earth's Sciences: Supplementary Material (S100 ; prog 30).

RADIO 4 (VHF)

9.05 Open Forum—27.
9.20 O.U. Announcements/Music Fill.
9.40 The age of revolutions: "Beethoven in an Age of Revolution (A202 ; prog 25).
10.00* Personality and learning: Creole Dialect (E201 ; prog 25).
10.20* Twentieth-century poetry: "Just Wink as You Depart"—W. H. Auden and light Verse (A306 ; prog 13).
10.40* Modern art from 1848 to the present: styles and social implications: Modern Art and Everyday Design (A351 ; prog 12).
11.00* Decision making in Britain: The Central Unit on Environmental Pollution (D203 ; prog 20).
11.20* Science and belief: from Copernicus to Darwin: Vitalism and the Organic Chemists (AMST283 ; prog 8).
11.40* Social psychology: Social Skills: An Introduction (D305 ; prog 12).
14.00 Renaissance and Reformation (A201 ; prog 26). Reformation Studies Thomas Cranmer (PA981 ; prog 61).
14.00* Management in education: The Framework of Law (E321 ; prog 9).
14.40* The sociological perspective: Industrialisation and Secularisation (D283 ; prog 12).
15.00* War and society: BBC and World War II (The Home Front) (A301 ; prog 11).
15.00* Curriculum design and development: Portrait of Countesthorpe College (E203 ; prog 18).
15.40* Urban development: Social Perception and Housing (Chicago) (DT201 ; prog 24).
16.00* The handicapped person in the community: Work Preparation and Further Education (P853 ; prog 9).
16.00* Patterns of inequality: Political Independence and India: continuity (D302 ; prog 14).
16.40 Language and learning: Deprivation (E262 ; prog 12).

RADIO 2 (VHF)

replacement programmes for North Scotland and Wales

24.00* Twentieth-century Poetry: "Just Wink as you Depart"—W. H. Auden and Light Verse (A306 ; prog 12).
00.20* Modern art from 1848 to the Present: styles and social implications: Modern Art and Everyday Design (A351 ; prog 12).
00.40* Science and belief: from Copernicus to Darwin: Vitalism and the Organic Chemists (AMST283 ; prog 8).

Middlesex Polytechnic
INSTITUTIONS OF THE EUROPEAN COMMUNITY
One-day conference: 20 October
COMMONWEALTH HALL, 18-20 CRAVEN STREET, LONDON, W.C.2.
Speakers include: Lord Gladwyn, Tom Ellis MP, Bill Con O'Neill, Keith Kyle. Cost, including lunch, etc.: £10. Further details: Dean of Humanities, Middlesex Polytechnic, The Burroughs, Hendon, London NW4 4BT. Tel. 01-202 6545.

ANNOUNCING
PROCEEDINGS of the 2nd Caribbean Conference in Combinatorics and Computing held at the University of the West Indies, Barbados, West Indies, from January 4 to 7, 1977.
Edited by: R. C. Read (Univ. of Waterloo, Canada) and C. C. Cadogan (Univ. of West Indies, Barbados).
Price: $17.30 U.S. (including postage). Approx. 236 pages.
Available: July, 1977.
Please order from: Dr. Charles C. Cadogan, Department of Mathematics, University of the West Indies, P.O. Box 64, Bridgetown, BARBADOS, West Indies. Payment by: Bank Draft, International Money Order.

Sunday August 14

BBC 1

7.15 Genetics: Heterosis (S299 ; prog 12).
7.40* Biochemistry: Purification of an Enzyme (S2-1 ; prog 2).
8.05* Urban development: An Overview (DT201 ; prog 12).

BBC 2

7.40 Arts foundation course: Mendelssohn, 1829 (A100 ; prog 27).
8.05 Science foundation course: Continental Drift and Seafloor Spreading (S100 ; prog 26).
8.30* Mathematics foundation course: Error Correcting Codes (M100 ; prog 25).
8.55* Electromagnetics and electronics: Design Study 1: Power Amplifier—The Output Stage (TS283 ; prog 13).
9.20 Biological bases of behaviour: Memory and Forgetting (SDT286 ; prog 13).
9.45 Geophysics: Cyprus—A Geophysical Case Study (S2-4 ; prog 2).
10.10* The age of revolutions: Ingres (A202 ; prog 12).
10.30* Personality and learning: Education in Trinidad (E201 ; prog 12).
11.00 Mass communication and society: Also Starring (DE353 ; prog 10).
11.25 Elements of music: Harmonic Analysis, 2 (A241 ; prog 6).
11.50 The Earth's physical resources: Concrete (S266 ; prog 9).
12.15* Fundamentals of human geography: Diffusion of Dutch Elm Disease (D301 ; prog 12).

RADIO 3 (VHF)

(2.40* Curriculum design and development: Curriculum Innovation (E203 ; prog 19).
13.05* An introduction to psychology: Search for the Suffix (DS261 ; prog 11).
13.30* History of mathematics: New Worlds from Old (AM289 ; prog 8).

RADIO 3 (VHF)

0.00 Integration and normed spaces: Hilbert Space (M331 ; prog 7).
0.20 Decision-making in British education systems: School and Community (E221 ; prog 13).
0.40 OU Announcements/Music Fill.
7.00 Making sense of society: Power in the City (D101 ; prog 28).
7.20 Elements of music: Harmonic Analysis (1) (A241 ; prog 12).
7.40 Technology foundation course: Moving Pavements (T100 ; prog 31).

RADIO 4 (VHF)

0.10 National income and economic policy: Economic Policy and the Labour Government of 1964-70 (D282 ; prog 13).
8.30 The early Roman empire and the rise of Christianity: The Britons Under Rome (A291 ; prog 12).
8.50 International politics and foreign policy: Images and Evidence: An Evaluation of the Television Programmes (D332 ; prog 15).
10.10 The digital computer: Design of a Dedicated System (TM221 ; prog 11).

RADIO 2 (VHF)

24.00* The age of revolutions: Beethoven in an Age of Revolution (A202 ; prog 20).
00.20* Renaissance and reformation: Reformation Studies (A201 ; prog 26). Reformation Studies: Thomas Cranmer (PA901 ; prog 6).

Monday August 15

BBC 1

6.40 Solids, liquids and gases: Thermodynamics (3) (ST281 ; prog (3).
7.05 Regional analysis and development: Government Control of Regional Development (D342 ; prog 7).
7.30 Social psychology: Social Skills Therapy (2) (D305 ; prog 13).

BBC 2

6.40* An algorithmic approach to computing: String Processing (M251 ; prog 11).
7.00* Ecology: Ants and Acacias (S323 ; prog 11).
7.30* Art and environment: Community Theatre (TAD292 ; prog 8).
10.35* Technology foundation course: Traffic Control (T100 ; prog 31).

RADIO 3 (VHF)

6.00 Personality and learning: Cultural Bias in Children's Books (E201 ; prog 24).
6.20 The nineteenth-century novel and its legacy: Tolstoy's view of Art and Morality (A302 ; prog 13).
6.40 The development of instruments and their music: Twentieth Century Music: Extracts (2) (A304 ; prog 13).
17.45* Language and learning: Deprivation (E262 ; prog 12).
18.05 Historical data and the social sciences: Masters and Mistresses (D301 ; prog 8).
18.25* Systems modelling: For or Against Cost Benefit Analysis (T341 ; prog 7).
18.45 Public Administration: Devolution (D331 ; prog 9).
19.10* Making sense of society: Power in the City (D101 ; prog 28).

Replacement programmes for North Scotland and Wales

24.00* Decision making in Britain: The Central Unit on Environmental Pollution (D203 ; prog 20).
00.20* Management in education: The Framework of Law (E321 ; prog 9).
00.40* War and society: BBC and World War II (The Home Front) (A301 ; prog 11).

Tuesday August 16

BBC 1

6.40 An introduction to materials: Car Bodies (T252 ; prog 14).
7.00* Geophysics: Cyprus—A Geophysical Case Study (S2-4 ; prog 2).
7.30 Statistics: an interdisciplinary approach: Linear Regression (MDT241 ; prog 8).

BBC 2

6.40* Biological bases of behaviour: Memory and Forgetting (SDT286 ; prog 13).
7.00 Urban education: Metro: Curriculum Issues (E351 ; prog 8).

BBC 2 (contd)

7.30 English Urban history 1500-1780: Profit and Patronage in Urban Development (A322 ; prog 7).
18.10 Systems performance: human factors and systems failures: Earthquakes and Technology (TD342 ; prog 10).
18.35* Science foundation course: Continents, Drift and Seafloor Spreading (S100 ; prog 25).

RADIO 3 (VHF)

6.00 An introduction to psychology: The Structure of Meaning (DS261 ; prog 10).
6.20 History of mathematics: The Leibnizian Tradition (AM289 ; prog 9).
6.40 Patterns of inequality: Political Independence in India: Control (D302 ; prog 27).
17.45 Earth science topics and methods: Reflected Light Microscopy (S2- ; prog 6).
18.00 Problems of philosophy: Freedom and Foreknowledge: A Dialogue between Leibniz and Arnauld (A30- ; prog 10).
18.25* Elements of music: Harmonic Analysis (1) (A241 ; prog 12).
18.40* Drama: Music in Brecht's "Mother Courage" (A307 ; prog 17).
19.00* Arts foundation course: History and Authenticity—Charles Cudworth talks about Handel's "Messiah" (A100 ; prog 27).

replacement programmes for North Scotland and Wales

24.00* Social psychology: Social Skills: An Introduction (D305 ; prog 12).
00.00 Urban development: Social Perception and Housing (Chicago) (DT201 ; prog 24).
00.40* Curriculum design and development: Portrait of Countesthorpe College (E203 ; prog 18).

Wednesday August 17

BBC 1

6.40 Systems behaviour: Sheep Production (T241 ; prog 12).
7.00* Integration and normed spaces: Convergence and Normed Spaces (M331 ; prog 7).
7.30 Telecommunication systems: Colour Television 1 (T321 ; prog 13).

BBC 2

6.40* Genetics: Heterosis (S299 ; prog 12).
7.05* The Earth's physical resources: Concrete (S266 ; prog 9).
7.00 The early Roman empire and the rise of Christianity: The Establishment in Britain (A291 ; prog 6).
11.20* Industrial relations: "Bloody Good Colliers" (P881 ; prog 3).
10.55 Mechanics and applied calculus: Rotating Frames 1—Basics (MST282 ; prog 13).
17.20 Twentieth-century poetry: Robert Lowell (A306 ; prog 13).
17.40* Management in education: Autonomy: The Nelson Touch (E321 ; prog 6).
(0.10* Modern art from 1848 to the present: Styles and social implications: Moholy-Nagy: Paintings, Photography, Film (A351 ; prog 9).
18.35* Arts foundation course: Mendelssohn, 1829 (A100 ; prog 27).

RADIO 3 (VHF)

6.00 People and organizations: The Military Self-Image (DT352 ; prog 7).
6.40 People and work: General Practice (DE351 ; prog 12).
17.45 Environmental control and public health: Noises While You Work (PT272 ; prog 13).
18.00 Decision-making in Britain: The Royal Commission on Environmental Pollution (D203 ; prog 21).
18.20 OU Announcements/Music Fill.
18.45* Biochemistry and molecular biology: DNA Repair (S322 ; prog 11).
19.05* Mathematics foundation course: Differential Equations (1) (M100 ; prog 24).

replacement programmes for North Scotland and Wales

24.00* The handicapped person in the community: Work Preparation and Further Education (P853 ; prog 9).
00.20* Patterns of inequality: Political Independence in India: Control (D30 ; prog 25).
00.40* Language and learning: Deprivation (E262 ; prog 12).

Thursday August 18

BBC 1

6.40 People and work: The Consultant (DE351 ; prog 10).
7.00* Mass Communication and society: Also Starring (DE353 ; prog 10).

7.30* Elements of music: Harmonic Analysis, 2 (A241 ; prog 6).

BBC 2

6.40 Education, economy and politics: Educate Together (E352 ; prog 6).
7.05 Biochemistry and molecular biology: Signals and Receptors (S322 ; prog 13).
7.30 Fundamentals of statistical inference: Weights, Measures and Tables (S341 ; prog 6).
10.55 Decision making in Britain: Is Option for Eternity (D203 ; prog 21).
17.20* Systems behaviour: Shop Production (T241 ; prog 13).
17.45* The development of instruments and their music: Harlok and the Modern String Quartet (A304 ; prog 13).
18.10 English urban history 1500-1780: Profit and Patronage in Urban Development (A322 ; prog 7).
18.35* Making sense of society: Power in Society, San Francisco Bay Area: Hapid Transit: "Assembling the Power Structure" (D101 ; prog 28).

RADIO 3 (VHF)

6.00 Soviet Government and Politics: Soviet Political Culture (D331 ; prog 6).
6.20 Urban development: The Social City (DT201 ; prog 23).
6.40 Industrial relations: The Pit Community (P881 ; prog 7).
17.45 Decision making in British education systems (E221 ; prog 15).
18.05 O.U. Announcements/Music Fill.
18.25 Genetics: The Biological Approach (S299 ; prog 11).
18.45* Systems management: Management Information Systems (T243 ; prog 6).
19.10* Technology foundation course: Moving Pavements (T100 ; prog 31).

Replacement Programmes for North Scotland and Wales

24.00* People and organizations: The Military Self-Image (DT352 ; prog 7).
00.20* Personality and learning: Cultural Bias in Children's Books (E201 ; prog 24).
00.40* Open Forum—27.

Friday August 19

BBC 1

6.40 War and society: The Resistance (A301 ; prog 12).
7.05 Renaissance and Reformation: From Altar to Pulpit (A201 ; prog 15).
7.30 Systems performance: human factors and system failures: Earthquakes: Prediction and Prevention (TD342 ; prog 11).

BBC 2

6.40 Patterns of inequality: International Aid (D302 ; prog 15).
7.30* Twentieth-century poetry: Robert Lowell (A306 ; prog 13).
16.55 Science and the rise of technology since 1800: The Explosives Industry (AST281 ; prog 8).
17.20* Solids, liquids and gases: Thermodynamics (2) (ST281 ; prog 8).
17.40* Regional analysis and development: Regional Development (D342 ; prog 7).
18.10* Social psychology: Social Skills Therapy (2) (D305 ; prog 13).
18.35 The early Roman empire and the rise of Christianity: The Establishment in Britain (A291 ; prog 6).

RADIO 3 (VHF)

0.00* Environmental control and public health: Noises While You Work (PT272 ; prog 13).
6.20 An introduction to materials: The Designer's Knowledge of Polymers (T252 ; prog 3).
6.40 O.U. Announcements/Music Fill.
17.45* Integration and normed spaces: Hilbert Space (M331 ; prog 7).
18.05 Linear Mathematics: Fourier Series (M201 ; prog 15).
18.25 Ecology: How a Research Team Thinks: Supplementary Material (S323 ; prog 4).
18.45 Genes and development: Experimental Approaches to Amnesia (SDT286 ; prog 10).
19.00 Science foundation course: Revolution in Earth's Sciences: Supplementary Material (S100 ; prog 30).

Replacement programmes for North Scotland and Wales

24.00 Renaissance and Reformation: Reformation Studies (PA981 ; prog 26). Spanish Mystics (PA981 ; prog 1).
00.20 History of architecture and design 1890-1939: Frank Pick 1930s (A305 ; prog 23).
00.40 The age of revolutions: Orpheus Music I (A202 ; prog 20).

Frances Gibb reports on the consequences for inventors of a new Bill in the making

Patent laws are the necessity of university invention

Universities are a major source of inventions. In 1975/76, the year for which the latest figures are available, over 500 were notified to the National Research and Development Corporation, a Government-sponsored body which provides money for exploiting inventions with potential for industry and commerce.

Although mainly geared to industry the new Patents Bill, now in its last stages at the House of Commons, has several implications for universities. Its main aim is to harmonize British patents law with that of the rest of Europe, bringing it into line with the European Convention on Patents.

It was prompted by a Government committee investigation into patents law four years ago which found it outmoded not only in the light of European arrangements, but also in view of modern industrial requirements.

Under the new Bill, there is a redefinition of what is patentable. An invention must be new, involve an inventive step, and be capable of industrial application. A discovery of a scientific theory or mathematical method, a literary, dramatic or artistic work, a computer programme or rules for playing a game or doing business, are not patentable.

For academics, the legislation will have two main effects. First, they will no longer be able to publish details of their inventions in learned society journals if they wish later to apply for a patent. Prior journal publication of an invention will now automatically disqualify it from the right to a patent.

Second, they will have a statutory right to some compensation from their inventions if their employer, the university, derives "outstanding benefit" from it.

Under the present Act, there is provision for publication of an invention in a learned society journal and a period of grace before applying for a patent. Under the new law, this period of grace will disappear and publication be allowed only if an application for a patent has been made.

Reactions to this proposal have been mixed. Some academics, including the Association of University Teachers, see it as a genuine threat to the free flow of information.

Mr Nick Childs, the librarian at Brunel University, said that it would have repercussions on the availability of information in theses. Academics would tend to reveal less of their research in theses if they thought they might apply in the future for a patent, he said. "It will make theses confidential and interfere with the free dissemination of knowledge."

But Mr Michael Hills, director of the Science Reference Library, argues that it will make little difference once academics accustom themselves to the idea of thinking ahead.

"Probably most academics were not aware that they had a period of grace anyway", he said. "And it avoids arguments about what is and what is not a journal of a learned society."

The Bill also contains a requirement for early publication. At present, if a patent application is made, details of the invention can only be published after an examination: that is, after it has been decided whether the invention is new and not obvious. (The idea of "obviousness"—whether the invention was too apparent to be creditworthy—is new in the Bill.)

This meant that publication was sometimes delayed for two and a half years. Mr Hills said that this was a particular hindrance in fast developing subjects like electronics, where by the time the invention was published it was almost out of date.

Under the Bill, however, the invention must be published within 18 months of its application being placed with the Patent Office, and in some cases within six months. This will help those who want the information, Mr Hills explained. "The patent is a bargain between the crown or state and the inventor. The crown grants the inventor a monopoly on the invention in return for the full disclosure of its nature; in the hope that the disclosure will prompt new developments."

Earlier publication would favour scientists and engineers, who in many branches, depended on patents as the only source of worthwhile information, especially in the polymer field.

Another implication of early publication is that the Patent Office will have to publish twice: when the application is made and when the patent is granted. Mr Hills said this would pose a problem for libraries, many of whom could not afford both sets of publications. They would have to rely on the publication of the application, in the hope that the final patented invention would not be too different.

On the question of ownership and compensation, the Bill says that if the invention is produced during the normal course of an employee's duties, ownership of the invention is the employer's. But for the first time it provides for employee compensation if, having been granted a patent, the employer then derives "outstanding benefit".

It says that the employee should receive a "fair share" of the benefit and that is defined quite closely in the Bill.

The AUT, however, argues that the Bill is hazy with respect to ownership. It clarifies the law on cases where, for instance, a university administrator produces an invention in his own time at home: ownership is his. But it leaves grey the question—which is peculiar to academics—of what constitutes "normal duties".

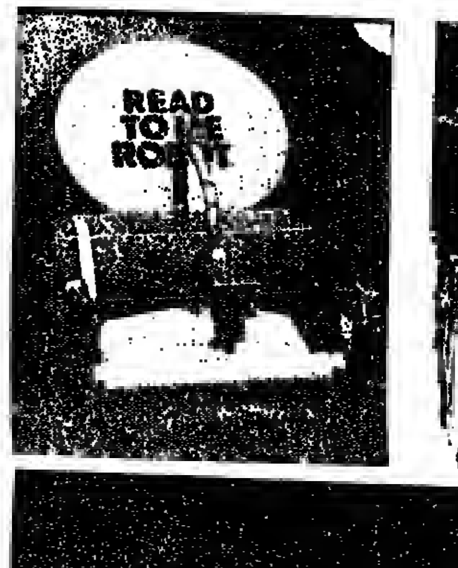
Mr John Akker, deputy general secretary of the AUT, said: "Since hours of work are not precisely laid down, it would be possible for the employer to state that all research, whether undertaken at the university or not, belonged to the employer. "The situation, therefore, is that in one of the sectors which is responsible for the most inventions, the rights of inventors will not have been advanced in the slightest."

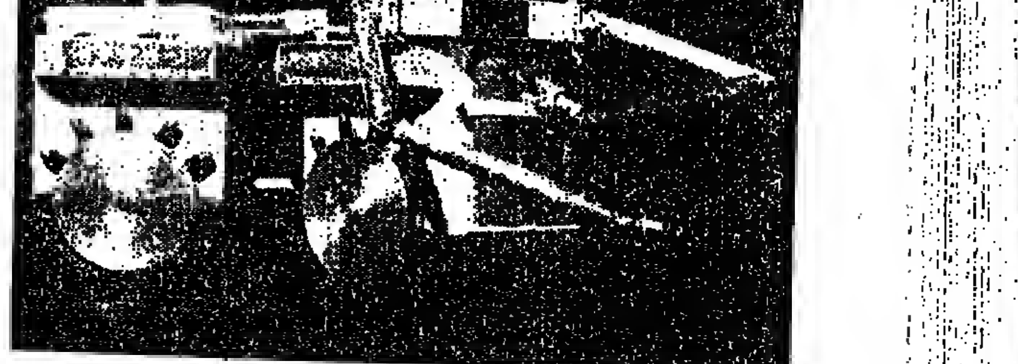
Present practice is that many universities do not claim ownership, although they have it in law, and in some places universities have an agreement with the National Research and Development Council that the university and the inventor will share the benefits if the invention is exploited.

Under the new Bill, contentious cases will be dealt with by a new Patents Court. Mr Edward Prosser, a temporary officer at the Committee of Vice Chancellors and Principals, which currently had a working party on patents, said the CVCP was likely to discourage universities from getting involved in legal wrangles in the Patents Court. In many cases cost and complexity made it unworthwhile, he said.

Instead, the working party, which under the chairmanship of Professor Stanley Dennison of Hull University, is expected to produce a guide on patents law for universities in the next few months, would try to steer away from the question of ownership. "Ownership is almost a metaphysical issue. The group is saying: 'let us look at the question from the point of view of the exploitation of research results; the hard cash.' Many inventions are notified but not many are actually exploited."

It would be trying to work out a framework for the sharing of revenue, and to ensure that all parties involved—the Government or research councils who put up the money, the university who provided the facilities and the inventor—would benefit.





The plight of the blind led Dr W. K. Taylor, of University College London, to design a machine that reads books aloud (top left). Dr M. W. Thring of Queen Mary College, London, demonstrates his stair climbing machine (top right). He is one of the inventors featured in the British Genius Exhibition currently running in Battersea Park, London. He now specializes in robots to put out fires, do the housework, or (bottom) mine coal.

A magnetic levitation train developed by Professor E. V. Jaywant of Sussex University's department of applied science. When in operation, magnetic attraction allows it to hang from an overhead rail. There is no noise, no wear and it is powered by an inexpensive linear induction motor.

Three-year quest for consumer's-eye view of student choice

Judith Judd looks at a research project which examines student choice and institutional change

How do students choose their courses in the bewildering and changing world of higher education? What do they think of them and what sort of curriculum should the new institutes of higher education be providing?

The Department of Education and Science has supplied the money for a research project to look into these and other questions which have arisen mainly because of the cuts in teacher training and the need of colleges of education to diversify.

The project, which has the official title "A Study of Student Choice in the Context of Institutional Change" is based at Bulmershe College of Higher Education, Reading. The study involves three colleges, Bulmershe, Edge Hill, in Ormskirk, Lancashire, and the Anglican college of Higher Education, Ripon and York St John. It began last May and is scheduled to take just over three years.

The entire 1976 entry of the three colleges was asked to complete questionnaires. The aim of these was to discover what expectations students had of their courses and whether those had been fulfilled, whether they were satisfied with their choice and why they chose their particular college.

Mr Clem Adelman, who is in charge of the project, said he wanted to get a consumer view. Some the students who came to Bulmershe were first asked questions while they were still at school. The project is interested to discover why students pick colleges of higher education rather than polytechnics or universities.

Curriculum rationale

The researchers are not confining themselves to questions of how and why students make their higher education choices. To illuminate the study they are also taking an overall view of the curriculum. One aspect of this is an examination of the sorts of control which exist over the curriculum in the three institutions, whether they have subject departments, interdisciplinary courses or faculties. Another is an attempt to establish a rationale behind a curriculum, the reasons for the absence or presence of particular elements and of the substitution of one for another.

He believes that the colleges should look at what is educationally desirable rather than at student preferences when they are designing their courses. "Student choice is predicated on the notion of the open market that you supply courses which are the most popular. ... think colleges should offer the courses of which they are capable and which contribute to a defensible educational programme." One of the vital questions the research hopes to answer is to what extent diversification should be carried out.

Mr Adelman thinks that the future of the colleges of higher education lies in the achievement of an integrated curriculum with a professional orientation, courses which are based on the ethos of community and caring for other people which have been a distinctive feature of the colleges of education. The professions he has in mind are those such as occupational therapy and speech therapy.

"The crucial thing they can provide which has not happened in the universities and polytechnics is a dialectic between theory and practice." The aim of the present project is not to criticize particular courses but to look at the curriculum problem as a whole.

Mr Adelman emphasizes that it is too early to make any but the most tentative suggestions about what is likely to emerge from the research. The evidence so far, however, supports his view that colleges of higher education have a future. Many of the students he surveyed had A-level passes which would have secured them places at universities ... colleges, pleasant settings had played an important part in their choice.

The results of this year's investigations show that there is a high level of satisfaction with the Diploma in Higher Education and the degree of choice it offers, though this may prove to be the result of initial enthusiasm.

The opportunities which diversification offers for innovation through the DipHE and other courses is another part of the project. The researchers are looking at the constraints faced by a college which attempts to innovate. Key members of staff are being interviewed, not only to discover whether they are aware of the roles of other members of staff, but also to find out what internal and external pressures they face in designing new courses.

Barriers to break

Mr Adelman says that some barriers to innovation will be difficult to break through. One of these is the tradition which makes girls choose "art" and boys "science" subjects. Evidence collected to date shows that traditional attitudes are beginning to change slightly but that there is still a long way to go. "If you are going to diversify, a break in this cycle should be part of the diversification," Mr Adelman says.

Another area where prejudice still prevails is in the division between arts and sciences. It remains difficult to find courses which mix the two or students who are prepared to study both. Again, says Mr Adelman, diversification is starting to alter this.

One of the project's aims is to help the institutions involved to study themselves critically. There are three working parties, one in each college. The reports on each college are seen only by the college itself. Mr Adelman believes it is of value to the colleges to know how the researchers, who are independent evaluators, see them.

Overall reports from the project go to a steering committee which consists of representatives from the colleges, the DES, the Inspectorate and a comprehensive school headmaster. The job of the committee is to make comments on the conduct of the research. No university, Mr Adelman points out, would agree to submit itself to a similar process.

ACADEMIC DEVELOPMENTS

Meaning of 'there's the rub' fully explained

by Clive Cookson
science correspondent

Durham University and Sunderland Polytechnic are joining forces to promote tribology in the North-East. This will involve teaching local industrial engineers about friction and lubrication rather than encouraging Geordie tribal rites.

Many engineers do not yet know what tribology means, a polytechnic spokesman said, even though disregard for it costs British industry an estimated £1,000m a year. So when Sunderland and Durham advertised their joint MSc in tribology in the local press they had to explain that it was the study of friction, the wear it causes, and the lubricants and bearings that can reduce it. The word is derived from the Greek *tribos*, rubbing. According to the Oxford English Dictionary it was first used in 1966.

The MSc two year, part-time course, which starts in September, is for graduate engineers and applied scientists employed by firms in the North-East. It is the first joint postgraduate venture by the university and the polytechnic and is also believed to be Britain's first part-time tribology degree. Leeds University runs a full-time MSc.

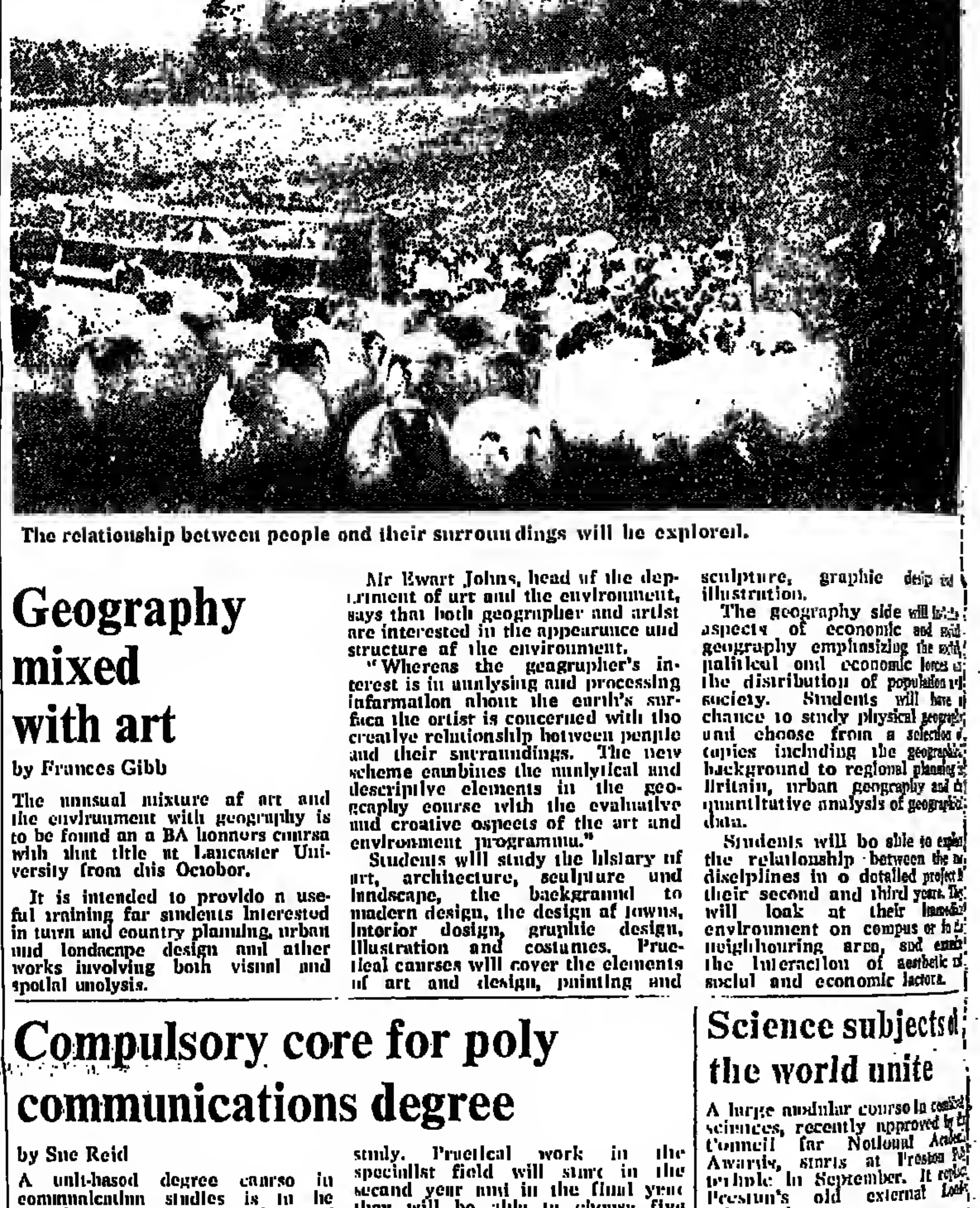
The link was developed through the initiative of Dr Andrew Hargreaves, who has worked in both institutions. He did a PhD in the department of engineering science at Durham before joining Sunderland's mechanical engineering department.

The first year will consist of a mixture of lectures and practicals. The initial 12 weeks will be held in Durham and the remaining 23 in Sunderland, but staff from both departments will share the teaching throughout.

The second year will be centred on major design and experimental projects, which may be carried out at the university, polytechnic or, possibly, the student's own workplace. At the same time lectures on specialist topics will be given with the help of visiting lecturers.

In addition to the normal industrial side of tribology—machine dynamics, bearing manufacture, hydrodynamic and hydrostatic lubrication, seals, and so on—students will be shown the biological applications by Dr Tony Unsworth of Durham University, an expert on the lubrication of human and animal joints.

He is well known for having solved the puzzling phenomenon of knuckle cracking: the liquid lubricating the finger joints "boils" when the pressure inside the joint is reduced as the joint is pulled apart. A bubble forms and within a hundredth of a second collapses again—making the characteristic cracking sound.



The relationship between people and their surroundings will be explored.

Geography mixed with art

by Frances Gibb

The unusual mixture of art and the environment with geography is to be found on a BA honours course with that title at Lancaster University from this October.

It is intended to provide a useful training for students interested in town and country planning, urban and landscape design and other works involving both visual and spatial analysis.

Mr Ewart Johns, head of the department of art and the environment, says that both geographer and artist are interested in the appearance and structure of the environment.

"Whereas the geographer's interest is in analysing and processing information about the earth's surface the artist is concerned with the creative relationship between people and their surroundings. The new scheme combines the analytical and descriptive elements in the geography course with the evaluative and creative aspects of the art and environment programme."

Students will study the history of art, architecture, sculpture and landscape, the background to modern design, the design of towns, interior design, graphic design, illustration and costumes. Practical courses will cover the elements of art and design, painting and sculpture, graphic design and illustration.

The geography side will include aspects of economic and social geography emphasizing the social, political and economic forces and the distribution of population in society. Students will have a chance to study physical geography and choose from a selection of topics including the geographical background to regional planning in Britain, urban geography and the quantitative analysis of geographical data.

Students will be able to explore the relationship between the two disciplines in a detailed project in their second and third years. They will look at their immediate environment on campus or in the neighbouring area, and examine the interaction of aesthetic and social and economic factors.

Teachers get industry training

A degree course specifically designed for aspirant teachers of business studies is to be introduced by Sunderland Polytechnic's faculty of education this September.

The BEd honours degree in education and business will, says the polytechnic, be the only one of its kind in the country and provide an opportunity for those students wishing to become highly skilled teachers of a new but rapidly expanding area of study now officially recognized as a shortage subject by the Department of Education and Science.

It will produce a new group of graduate teachers capable of working with fourth, fifth and sixth form pupils in business studies including subjects such as consumer education, commerce, office practice, administration, economics and accounts.

A polytechnic spokesman said this week: "For the first time this course will give business representatives the chance to be directly involved with the training of teachers. All students will spend six months of their course with a business organization and during that period they will be given every opportunity of developing an insight into the realities of the world of work.

"The course itself will emphasize the crucial importance of a student's commitment to teaching as a career. At all times considerable weight will be placed on the skills and techniques which are the hallmark of professional competence."

Close attention would be paid to the skills of communication, planning, classroom management and evaluation to ensure that effective use could be made of the business studies knowledge students had acquired.

"This knowledge will be acquired alongside students on the BA and BA honours course in business studies. At the end of one year those who, after some experience in schools, decide they do not wish to teach may transfer to the full business studies programme", added the spokesman.

Compulsory core for poly communications degree

by Sue Reid

A unit-based degree course in communication studies is to be launched by the Polytechnic of Wales' department of social studies this autumn. The BA honours programme will allow students to construct their own course of study tailored to their own interests and abilities with their chosen career in mind.

Validated by the Council for National Academic Awards last month, the three year, full time course is expected to attract 30 students initially and ultimately reach a first year intake of 50.

It will include a compulsory core of communication studies with units covering culture and society, interpersonal communication, theories of social interaction and exploring the analytical approaches to communication. Alongside the core study, which is spread over the first two years, students will have the opportunity of studying three fields covering behavioural, linguistic and mass communication.

As they progress they will gradually narrow their area of study. Practical work in the specialist field will start in the second year and in the final year they will be able to choose five study options from a range including organizational behaviour, biological bases of communication, advanced grammars, logic and language, politics and the media and functions and forms of radio.

Students will be asked to complete a dissertation in their third year and while the course is not vocational it is hoped that some may opt to do an industrial sandwich placement at the end of their second year, coming back into college for their fourth year.

Mr John Fiske, the course tutor, said this week: "Communication is clearly a central part of human activity and until recently there was no opportunity for study of it at degree level."

The course would provide students with a route into careers, he added. Its design would allow students to select routes of study leading, for instance, towards specific careers in television, radio, journalism, publishing, community relations, organizational communications and public relations.

Science subjects of the world unite

A large modular course in combined sciences, recently approved by the Council for National Academic Awards, starts at Preston Polytechnic in September. It replaces Preston's old external London science degree.

"Approval marks the culmination of a major exercise in integration and cooperation between many sections of the polytechnic", a spokesman said.

The course, which will lead to a BSc with or without honours, will provide major areas of study in astronomy, biology, chemistry, mathematical sciences and physics and there will be minor components from other sections of the polytechnic including information science, art, politics and law.

Students will select two major areas of study to provide a broad-based science course and in addition they will have a choice of modules within each major area.

West Country planning triumph

A certificate of education developed by a unique planning process will begin at Plymouth Polytechnic in September. The course is the result of two years' work by a course planning committee which had representatives from most of the colleges in Devon and Cornwall.

It will be offered both at Plymouth Polytechnic and Cornwall Technical College and it is hoped that a course at Exeter College of Further Education will be approved by September next year.

Although the polytechnic will have overall academic responsibility for the three programmes, a joint committee will be set up to deal with administrative problems.

Dr L. C. Cannon, the polytechnic's Assistant Director (Academic), said: "This is the first course of its kind to be validated in this country by the Council for National Academic Awards and is a tribute to a careful, collaborative exercise undertaken in this part of the South West."

The aim of the syllabus is to provide a course of initial teacher training in further and higher education.

The polytechnic suggests the course may be useful in people teaching in the hospital services or the Forces. Unqualified teachers in secondary schools employed under certain conditions may also be eligible to apply.

The course will last two academic years and will be taught mainly through day release with four weeks' full-time. The aim is to help students to become more effective teachers.

To qualify, applicants must be employed in full-time teaching or have a substantial part-time commitment and have professional qualifications or a degree.

COURSES

BRITISH COUNCIL COURSE

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The course will be directed by Dr Charles Carter, Vice Chancellor and Professor Alec Ross, Professor of Educational Research (both of the University of Lancaster).

The course, which will be residential, is designed for non-UK citizens and is intended for senior academic and administrative staff from universities, government departments and other organisations involved in the direction and control of academic planning.

Prospectuses and application forms may be obtained from local Representatives of the British Council or from Courses Department, The British Council, 65 Davies Street, London W1Y 2AA.

Application forms must be received in London by 15 December 1977.

Fee £420 (demi-pension).

COURSES

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Wolsey Hall

With 80 per cent of its students drawn from public schools Sir Emrys Jones's Royal Agricultural College is a rather superior institution. Clive Cookson reports.

Agriculture's aristocrats learn the profitable way

Educational establishments sometimes undergo a dramatic transformation during the long summer vacations, when they hire themselves out for purposes very different from their normal termtime activities. Nowhere, however, changes character so completely as the fiercely independent Royal Agricultural College, Cirencester, the only college of its kind in Europe receiving no state aid, according to its principal, Sir Emrys Jones.

For threequarters of the year the college teaches the next generation of country landowners and big farmers to run their estates. The 720 students, all male, are 80 per cent public school, including an average 60 Etonians, and always include a sprinkling of titles, this year six Lords and 15 Hons and Sirs. They are as a body unashamedly, even unselfconsciously, right wing, dedicated to private enterprise and the preservation of private wealth.

Yet every year since 1953 the college has been taken over for a few weeks in July and August by the Transport and General Workers' Union to train shop stewards and branch officers. This year 620 officials are being taught the principles of free collective bargaining, communications techniques and trade union legislation.

The contrast delights Sir Emrys, a warm-hearted Welshman with a strong sense of fun and a broader accent than Moss Evans, general secretary-elect of the TGWU, whose visit to the Cirencester summer school he was eagerly looking forward to—partly so that Mr Evans, a noted singer, could accompany Lady Jones on her harp.

Sir Emrys was born into a Carmarthenshire sheep farming family in 1915—a very different sort of agricultural background from most of his students, who tend to come from lush farms of 1,000 acres upwards in the eastern counties of England. He was educated at Llandovery Grammar School and the University College of Wales, Aberystwyth, gaining first-class honours in agriculture.

After a distinguished career in the Civil Service as Chief Agricultural Officer at the Ministry of Agriculture and director-general of the Agricultural Development and Advisory Service Sir Emrys was appointed principal of the Royal Agricultural College in 1973, his first educational post.

He retires in September, 1978, to a bungalow in Louth, Lincolnshire, but he will keep in touch with the farming world through his chairmanship of the National Cattlebreeders Association and membership of the management board of Hill Samuel's agricultural property fund.

The Royal Agricultural College was founded in 1845 on the Earl of Bathurst's estate a mile from Cirencester on the edge of the Cotswolds. Thus it predates Wye, Britain's next oldest agricultural college, by nearly 50 years.

During this century, as other colleges have become established up and down the country, Cirencester has carved out a role for itself as the only establishment specializing in the problems and techniques of large-scale farming. Its model is the 2,000-acre mixed farm.

The college has been building up its own land holdings out of accumulated profits and it now has 1,300 acres: 600 adjoining the college and 700 on very different soil alongside the River Thames eight miles away near Cricklade. "We need 1,300 acres or more to be credible to the big farmers from the eastern counties who send their sons here", Sir Emrys says.

The college farms are used for educational purposes, of course, but their cropping and livestock policies make no concession to teaching. "The policy here is to maximize profits at all times." Net annual profits have averaged £40,000 over the past few years. Cirencester is therefore in the healthy position of having no debts and building up capital reserves for further land purchases or capital expenditure.

One recent development on the farm is an ultra-modern dairy unit for the milking herd of 180 cows, based on students' designs. Three novel features have made it a well-known showpiece for farmers, 4,500 of whom have been to see it so far.

First, the actual milking parlour is as automated as it is possible to be today. All the cowman has to do is put the milking clusters on the udders; they are removed automatically and the parlour washes itself out after the animals have left. A mini-computer controls the amount of concentrates fed to each cow, according to her own requirements.

Second, the milk is cooled to its storage temperature of 38°F by passing through a heat exchanger as soon as it leaves the cow. It then sits in a highly insulated tank without further refrigeration until removed by tanker. This system is much more energy efficient than the conventional method of cooling the milk in a refrigeration tank and continuing to supply electricity to keep it cold until taken away.

The third special feature is a highly sophisticated solution to the slurry removal problem that plagues many dairy farmers. The slurry, of which each cow produces a thousand gallons per year, is stored in a gigantic 267,000-gallon tank and used to fertilize the fields as required, without polluting local water courses.

The only part of the unit that is unlikely to be copied by visiting farmers, who take up nearly as much of the cowman's time as his cows, is the tutorial room above the milking parlour. It has a one-way mirror that allows students to see in without disturbing the cows.

The whole unit cost about £80,000 at 1975 prices but it is producing about £200,000 worth of milk each year.

The other major development overseen by Sir Emrys is a new academic block opened last year, containing lecture theatre, library and seminar room. It was paid for by three educational trusts—Frank Parkinson, Arthur Rusler and Ernest Bolley—and represents the only occasion on which the college has received major grants from outside sources.

Sir Emrys is proud of the whole Cotswold stone building, which, he rightly feels, is far better designed and fits into its surroundings more successfully than the neighbouring 1960s teaching block. But he is particularly proud of his lecture theatre.

Like the dairy, it has three special features, designed in this case for the injection of information to 120 first year rural estate management students rather than the extraction of milk from 180 cows. All three were introduced by Sir Emrys after watching lectures in the college's traditional theatres.

Students were falling asleep in the stuffy atmosphere, so he installed a super-efficient ventilation system that circulates the air eight times an hour and silently sets up a very gentle breeze through the theatre. They were gazing out of the windows instead of concentrating on the lecture, so the new theatre has no windows; and those in the back four or five rows were too far from the speaker for him to be able to see whether they were really listening to him, therefore Sir Emrys's theatre is a wide, shallow arc in which the whole audience is close to the lecturer.

He says its original nickname, "the principal's folly", has disappeared after a year's use. Next door is the splendid new library which houses the valuable collection of old agricultural books, including several from the sixteenth century, donated by Professor Bobby Boutflour, principal from 1931 to 1958.

The basic course structure at Cirencester was established between the wars. The college offers five courses: farming courses lasting one, two and three years, a three year course in rural estate management, and a one year advanced farm management course.

The three-year higher national diploma in agriculture (which includes a year's sandwich period of supervised farm training) is the only one leading to an externally validated qualification. It takes about 40 students a year.

Ninety a year enter the two-year course leading to the college diploma in agriculture. It is aimed specifically at wealthy farmers' sons and, in the words of the college prospectus, "whilst the science content is less than in the HND course, special emphasis is given to farm and estate management subjects, including farm law and tax planning". The academic entry qualification is five O levels.

The one-year farming course is "particularly appropriate to the more mature student or late entrant to the industry". These late entrants often include business or professional men who have inherited or made enough money to buy farms. Rural estate management is the largest course, with an annual intake of 120 (who need two A levels). The college diploma exempts students from the written examinations of the Royal Institution of Chartered Surveyors, and Cirencester is the main source of rural land agents in the United Kingdom.

The college awards prizes to the best prospective land agent and the best prospective landowner among the final year students. This year both were won by the sons of senior Conservative politicians—Martin Maudling and Andrew Pym respectively. "However much respect you have for their fathers, these two boys are even better", Sir Emrys said. "Andrew Pym has done brilliant work on the effect of capital taxation on land ownership, and Martin Maudling will make a superb land agent."

The success of Messrs Pym and Maudling gave Sir Emrys a lot of pleasure, but he confesses, not as much as the fact that a lad from a Welshpool comprehensive school beat all the public school boys to the college's gold medal for the best second-year student.

The fifth course, advanced farm management, is based on actual case studies. The 30 students investigate the financial and agricultural management of farms and estates, and the college has built up an enormous fund of knowledge about the running of British farms, though the staff do not have time to write it up for publication.

Nor do the college lecturers have the time or facilities to do any agricultural research. The staff : student ratio of 30 : 720 means [illegible] teaching. Mornings are devoted to lectures, which may be attended by 100 or more students. Tutorials are held in the afternoon in groups of 10 (each group meets about once a week). In addition, every student is allocated his own tutor to whom he can take any special academic or personal problem.

Sir Emrys feels that although the staffing level is "very tight" it is sufficient to cover the whole curriculum adequately and give students enough individual attention. However, the editorial of a recent issue of the college journal stated: "Although the value of a qualification gained at the college is not to be questioned, the fact that this is generally achieved with the minimum of involvement in the course is a sad reflection on the remoteness which exists between the students and staff.

"This is necessarily a difficult problem to overcome and can only be achieved by increasing the number of lecturers per student, thus enabling a more effective use of the tutorial system."

In the view of Patrick Mackarness, who went to study rural estate management at Cirencester after reading philosophy, politics and economics at Oxford, the teaching system works because Cirencester students, whose average age is 23 or 24, are generally more mature and confident than university students and they know exactly what they are going to do in life.

Sir Emrys caused a stir last winter by appointing Cirencester's first woman lecturer, Miss Margaret John, a 24-year-old Welsh farmer's daughter with an agriculture degree from Reading University. According to the *Daily Mail* at the time this revolutionary step provoked two long serving members of the staff to swear never to enter the senior common room again, though Sir Emrys says the report was quite untrue. Now, eight months later, Miss John says she is enjoying her job teaching animal husbandry, and she seems to have won over the doubters.

Every year Cirencester receives about 300 applications from potential female students. All are refused; and Sir Emrys maintains that Miss John's appointment will not be used as a precedent for the admission of women. The college has no suitable accommodation, he says, it has to turn away many hundreds of suitably qualified male candidates, and in any case 80 per cent of existing students are opposed to the idea. This estimate was disputed by Mr Mackarness, who thought 80 per cent would favour women if a vote were taken today.

People do occasionally leave Cirencester because they cannot take its all-male, public school atmosphere, but Sir Emrys says they number no more than two or three a year. Ten times as many are asked to leave after failing the yearly exams.

Following the public school example, the college authorities let the student body discipline itself as far as possible, through the union club, and help its own members who appear to be unhappy. In any case most students can afford to keep cars at the college and use them to get away at weekends.

He gives two main reasons why he will look back on his spell at Cirencester as five of the most rewarding years of his life. "The first is meeting and mixing with the students. I was really honestly surprised by the quality of the modern agricultural students. They are far more articulate and purposeful than the students I knew in my college days.

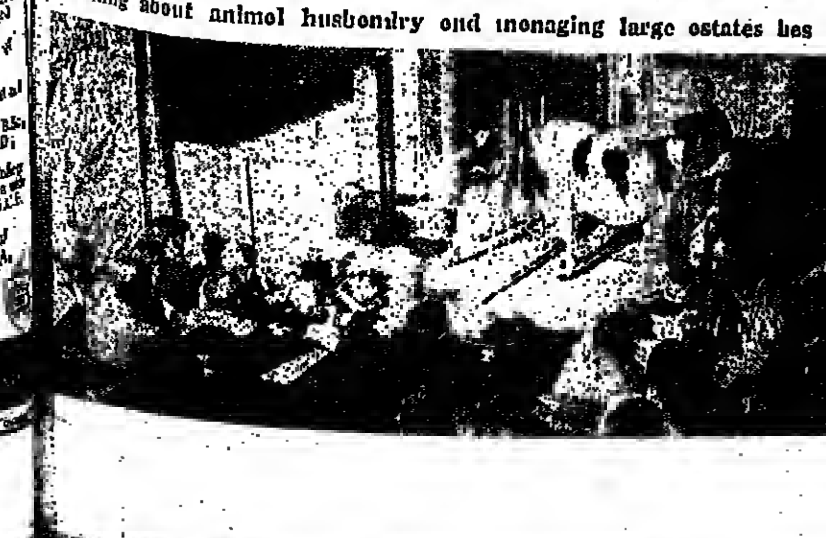
"The second is the satisfaction of building things—so different from shuffling paper in Whitehall. The new teaching block is probably the best thing I've done in my life: the satisfaction comes when you see keen young students using and appreciating it—and the taxpayer didn't have to contribute a penny".

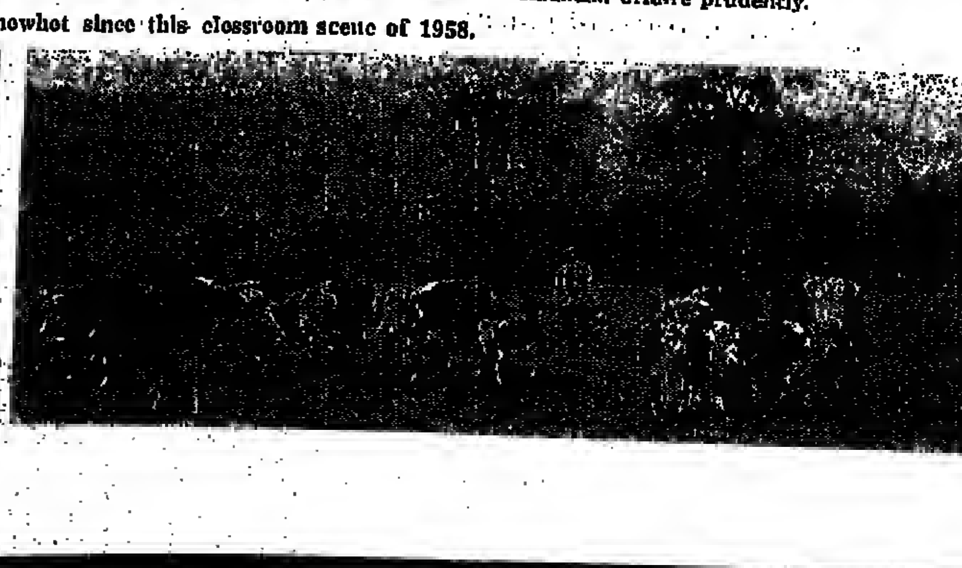
How does Sir Emrys see Cirencester's future? "Its current momentum will carry it safely through the next five years. The college is financially stronger now than it has been in the whole of its history, and demand for places has never been greater; forward bookings and registrations go up to 1982." The Department of Education and Science is on Cirencester's side, he feels, despite the college's strongly independent character. "When I first came here I had a lot of help and advice from the DES".

Sir Emrys feels passionately that Cirencester should be preserved, "though not as a museum". Its value lies both in its long traditions—"the landed families of this country have been sending their sons here for four or five generations"—and in the unique work it does to prepare young men for large scale farming—he is a firm believer in the 2,000 acre farm as the most efficient agricultural unit.

The big question in the long term is whether capital taxation will allow privately owned farm businesses of that size to continue to exist. But the Royal Agricultural College will help to ensure that Britain's big landowners are as well equipped as possible to meet this threat to their assets and the traditional character of rural Britain, by training them to run their farms efficiently and their financial affairs prudently.

Learning about animal husbandry and managing large estates has changed somewhat since this classroom scene of 1958.





Frances Gibb reports on the problems arts centres have in extending their areas of influence

Torn between the arts and entertainment

Exhibition at the Gardner Centre, Sussex University.

The yawning gulf between mass entertainment and the arts as defined by the Arts Council is threatening to prevent a cultural revival in Britain.

This warning is contained in a survey published by the Arts Council this week entitled *Three Arts Centres*, a detailed study of South Hill Park, Bracknell, The Gardner Centre, Sussex University, and Chapter Workshops and Centre for the Arts, Cardiff, which between them this year are receiving more than £250,000 in public money.

Mr Peter Stark, director of South Hill Park, says: "Many of today's artists are saying more and more esoteric things to a smaller and smaller percentage of the population." Unless a national agency devoted very large resources to this gap between entertainment, which "is carefully constructed and marketed for mass consumption" and the arts "as they are currently defined by the Arts Council", then there could be little hope for a cultural revival in Britain, he says.

One of the main problems is that arts centres, funded by both the Arts Council and local authorities (the latter to a lesser extent) are torn between the two. "A local authority", Peter Stark says, "must be looking for a service to its ratepayers which can be tangibly appreciated by the voters.

"They see an arts centre as part of the comprehensive leisure service for the people, the vast majority of whom, by the Arts Council's own admission, will have little or no interest in the arts, particularly the contemporary arts which the council seeks to promote."

The study shows that partly because of this conflict one of the arts centres' chief problems is involving the local community in their work. Generally there is a great lack of knowledge about their aims and work, and it was partly to counter this that Mr Robert Hutchison, senior research and information officer for the Arts Council, undertook the research.

"The past ten years has seen a remarkable growth in the number of arts centres in Britain (there are now about 150) without a parallel growth in public understanding of what happens in them, why it happens, and who funds the bill", he writes.

All three centres discussed are very different. (A study was also undertaken on Great Georges, Liverpool, but the staff did not agree to the report being published). South Hill Park, which began as a centre in 1972, is an old house set in 15 acres of its own grounds with a lake and wooded hill, two miles south of Bracknell.

The town population has grown from 5,000 in 1970 to about 45,000 now, and is expected to be 60,000 by the 1980s. New housing estates are still being built and in a few years' time the centre will be surrounded by housing development.

Drama, music, visual arts, printmaking, crafts and community theatre are the extensive variety provided for local residents. They have attracted a high level of attendance: 74 per cent of all new town residents claimed to have visited the Park, Mr Hutchinson says, and a reasonable estimate of attendance for 1975 was between 2,000 and 3,000.

But although the centre had been open for two years, a lot of visitors were new: for 14 per cent it was their first visit and another 14 per cent had been less than four times. Many had come to use bars, restaurants and coffee bars, and some 40 per cent were not engaged in creative activity.

He concludes that the Park provides considerable support for those already active in the arts. But there is little convincing evidence that in the past three years there has been a significant increase in the number of those taking more than a fleeting interest in arts and crafts activities. He adds, however, that it would be surprising if there had been such an increase in so short a time.

Mr Hutchison also points out that 30 per cent of skilled manual workers and 26 per cent of semi-skilled workers who visited the Park claimed to have visited the gallery, and 9 per cent and 2 per cent respectively the theatre.

The Arts Council door count had showed that the percentage of manual workers using the theatre or gallery was very small (4 per cent the theatre and 6 per cent the gallery). Against this, Mr Stark says that Bracknell is not primarily a manual workers' town.

For him the most significant fact is that 74 per cent of the town visited the centre, and only 9 per cent felt that the atmosphere put them off. He would prefer, he says, to be judged on the success of "converting vast numbers of people to the arts for life" in the future.

In general Mr Hutchison concludes that if more Bracknell people were to be stimulated to taking part in the arts, they needed to be involved in decision-making about what services and facilities the centre should provide and in choosing how they should be used and run.

The same problem exists at the Gardner Centre, Sussex University. This, the first university-based arts centre in the country, was opened in 1969 and is set on the campus itself. It draws money from the Gulbenkian Foundation, the Arts Council and to a lesser extent the local authority, and offers theatre, music, dance and visual arts, together with an artists-in-residence scheme.

A survey of student attitudes to the centre showed that all but 5.6.2 per cent failed to see it as integral to the cultural life of the campus. No one had season tickets, even those who were regular attenders (four or more times) and it seemed that most students went to London for the theatre.

As well as being culturally peripheral, the building itself is at the opposite end of the campus from student accommodation, and its publicity rarely penetrates the residences. For many students, the Gardner is a minor manifestation of the "straight" culture industry, which they reject partly because of its "elitism" and partly because of its "irrelevance".

But, if the first duty of the centre was to the university, it had to see itself in contact with the student population, an important part of it, he says.

A new act of faith was needed each year by administrators at university arts centres. A major change in policy was not needed; but a small switch of emphasis with "a slightly larger proportion of time and energy oriented towards the whole educational process and the arts as a process rather than a finished product".

One other possibility was to set up a study group which could be a meeting point for artists and scientists, and would supply scholarly and critical support.

It would also bring in people from outside the university. The main problem here was that the campus was cut off from the town. Mr Hutchison suggests a large signpost on the Brighton Lewes road, and possibly also an information outlet in the middle of Brighton, where tickets could be sold.

Nigel Stannard, the director, says that much of the poor response had resulted from the "built-in middle class formality of the building". The other major problem was money: the university grant was generous, but it was left to the Arts Council to subsidize plays and exhibitions.

The third arts centre, the Chapter in Cardiff, is based in the working class suburb of Canton, about two miles from Cardiff city centre. Cardiff has a population of some 300,000. Like the others the centre, which began in 1973, offers a variety of cinema, theatre, music and visual arts.

At the end of July, 1975, [illegible] just under 1,000 members, about [illegible] per cent from the Cardiff area and the rest from elsewhere in South Glamorgan. Most were returned fairly frequently: 60 per cent had been 10 or more times while fewer than a quarter had been less than four times. They were mostly under 35 and [illegible] and, as at other centres, there was a danger of "an elitism of youth".

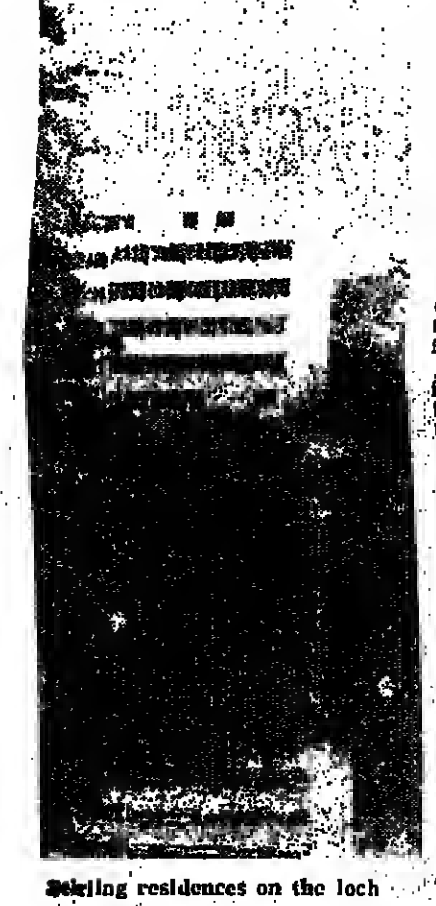
On the positive side, it is [illegible] by "a remarkable range of enthusiasts", Mr Hutchison says. Its main weakness is in management and administration, which has [illegible] a failure to attract much local authority support.

But he raises the question of whether its basic mix of alternative theatre, classical concerts, [illegible] cinema (a wide range), were the right recipe for an arts centre [illegible] to the city centre.

The survey concludes that in general, arts centres would benefit if their administrators had the chance to travel to gather ideas and share experiences. They have suffered from too much advice [illegible] the stimulus of conflicting ideas. Second, they could make more use of voluntary help. And third, they could develop links with adult education centres, with whose aims they often overlapped.

Three Arts Centres by Robert Hutchison, £1.50 from the Arts Council of Great Britain, [illegible] Piccadilly, London, W1.

Oh, we do like a holiday on the campus



Stirling residences on the loch

Hundreds of overseas holidaymakers, not to mention their British counterparts, are now discovering that staying on a university campus can be cheap, convenient—and fun. And as a result the letting of holiday accommodation by universities and university colleges has become big business.

Last year, for example, Stirling University—one of the pioneers of the plan for renting student flats to members of the public during vacations—boosted its income by no less than £476,000 as a result of holiday lettings. And this year the figure is likely to be nearer £650,000.

These figures are derived both from the rental that is charged, and from the increased takings in restaurants and bars. For students, they mean that term-time rentals are about 25 per cent lower than would otherwise be necessary.

They also mean that facilities like catering can be run at a loss during term.

Visitors to Stirling, in its attractive loch-side setting, are allowed full use of most campus facilities—including self-service restaurants, lounges, bars, theatre, colour television rooms, sauna, launderettes, banks, and a post office. The university's extensive sporting opportunities, which include sailing, rowing and fishing on the loch as well as squash, tennis and badminton courts and an indoor swimming pool, can also be used by holidaymakers for a small extra charge.

The university is ideally situated as a touring centre, with Edinburgh, Glasgow, the Trossachs, Loch Lomond, and Perth all within easy reach.

With such an impressive list of attractions, Stirling has no problem in filling the 1,650 beds that it has available.

Stirling's holiday accommodation consists principally of six-bedroomed flats with a lounge, kitchen, bathroom and toilet. Although the rooms are single study-bedrooms, they are suitable for families and for groups of youngsters—a suitability which is enhanced by the rental, which this summer is £72 per week per flat.

Overseas visitors have been quick to grasp the economic fact that by staying with five friends they need pay only £12 a week for their room—a rate made to seem even lower by current exchange rates. Dutch, German and French visitors have been flocking to the university, and this summer 22 per cent of the holidaymakers at Stirling will be from overseas—a proportion that is 50 per cent higher than last year.

Asked why they chose Stirling, overseas visitors have emphasized both the low cost and the proximity of so many of Scotland's beauty spots. The reputation of the university as a holiday destination owes much to word of mouth—Mr Riddy notes that there was one visitor from the tiny Dutch town of Nijmegen last year, and eight this year. But, paradoxically, it also owes something to the infamous demonstration against the Queen by students at the university in 1972.

Altogether, 37 universities and university colleges in Britain let holiday accommodation, and many of them are packed out during the summer vacation although it is less easy to find tenants during the winter or at Easter. They are linked through the British Universities Accommodation Bureau.

Many of them are also linked by a commercial company which has come on to the scene and now markets inclusive holidays based on university accommodation. Its name is University Holidays, and it is run by a businessman with a travel industry background, Mr John Rees.

University Holidays, who many people wrongly assume to be some sort of successor to NUS Travel, operate from Borehamgate House, Sudbury, Suffolk. They publish a colourful brochure with details of self-catering accommodation available at the universities of Aberdeen, Bangor, Bristol, Cardiff, Dundee, Essex, Exeter, Hull, Keele, London, Oxford, Sheffield, Southampton, Stirling, Strathclyde, Brunel and York.

As can be seen from the list, those universities have been chosen with an eye to touring prospects. The flats or houses are usually self-contained student accommodation consisting of study/bedrooms, a kitchen/dining-room, bathroom and toilet.

The size of the unit varies, but is usually four or six bedrooms. Costs start at about £15 per person per week, and there are also some bed and breakfast arrangements available at from £5 to £7 per night.

Mr Rees claims that holidaymakers will find that they have the campus available to themselves, but this is not the case in the summer season at universities like Stirling, York, Keele, Cardiff and Exeter—all of which play host to various conferences as well as to Open University summer schools.

But it does not matter, for the mix is a happy one. At York two years ago, postgraduate students, summer school students, and holidaymakers all mingled well.

Students, then, would seem to benefit as much from the holiday flats habit as do the visitors who manage to obtain this comparable accommodation. With nobody having any plans for a marked increase in prices, however, accommodation could be at a premium and holidaymakers would be advised to book early.

They would also be advised to book direct with the vacation letting controller at the university in question, rather than going through any commercial firm.

An exception might be Wivenhoe Park, an eighteenth-century manor house just outside Colchester the grounds of which now contain the University of Essex.

University Holidays have just opened the house as a residential centre, but here the week-long holidays cost a little more and offer a great deal more.

Until September 3 this year, and hopefully in future years too, the company have organized holidays in single, twin-bedded and family rooms which include the use of the house's facilities (lounges, cocktail bar, restaurant and lecture rooms) as well as the university's campus facilities. The weekly charge of £[illegible] per person will include a series of evening lectures on aspects of [illegible] life.

Robin [illegible]

When a schools inspector had to be university-trained

Following recent debates on the role of universities in planning school syllabuses, Pamela Horn looks at tensions that existed in the nineteenth century

During the last half century there has been no greater change in educational relationships than in those between school teachers and the members of HM Inspectorate.

Nowadays discussions between the two groups over such matters as curriculum content are carried on on terms of equality. But up to the First World War most teachers regarded inspectors with suspicion and dislike because of the power they wielded over the financing and running of the schools.

This was especially the case after the introduction of the Education Department's revised code of 1862, when the HMIs view as to what constituted a pass at the annual examinations in reading, writing, and arithmetic could decide the level of government grant for a particular school.

Payment by results system also contributed to the sterile atmosphere of the elementary schools, as inspectors such as Matthew Arnold recognized. In Arnold's view the system turned "the inspectors into a set of registering clerks, with a mass of minute details to tabulate. It is as if the generals of an army were to have their duties limited to inspecting the men's cartouch-boxes."

Yet despite the reservations of HMIs and the hostility of the teachers, it was only in the 1890s that payment by results was appreciably eased and not until 1900 did the block grant system finally eliminate this cause of tension.

Before that, the general secretary of the National Union of Teachers could describe the inspector, in 1892, as "the most autocratic public official west of Russia . . . his utterance reverberates, unchecked and unrevised . . . and all that the local school authority or the teacher may do is listen and acquiesce; protest or opposition to the oracular voice is hardly possible."

Another cause of teachers' resentment was the method of recruitment to the Inspectorate. From the earliest days elementary school staffs had been barred.

As the Newcastle Commission pointed out in 1861, university graduates were essential so that the "inspectors should be fitted, by previous training and social position, to communicate and associate upon terms of equality with the managers of schools and the clergy of different denominations".

Other critics considered that the repetitive and narrow educational regime adopted by teacher training colleges produced men "of tradition and routine", incapable of tackling the broader issues of elementary education with the "freshness and originality" shown by men "of the Varsity type".

Only in the 1890s did this prejudice begin to break down, as the first efforts were made to recruit HMIs from among former elementary school staffs, although this policy was not effectively implemented until after 1914.

Before the 1890s, the most that the elementary teacher could hope for was to be appointed to the far more lowly positions of inspector's assistant or sub-inspector, responsible for marking examination papers and generally saving the HMI as much trouble as possible.

The claims that university-trained inspectors had a broader approach in carrying out their duties were, of course, hotly disputed by the teachers themselves. They attributed the policy not to lofty educational aims but to patronage. In 1873 the president of the NUT put it bluntly: "We have gentlemen who have entered on another calling, brought from the profession of their choice to take the prizes of our profession—The great difficulty in our way is the system of patronage. Lucrative posts, with pensions attached, are convenient gifts in the hands of Government officials".

An examination of the careers of some of those who became HMIs confirms that the complaint of jobbery was not merely sour grapes. It applied even to the most eminent of the men appointed—Matthew Arnold, who had previously been acting as private secretary to Lord Lansdowne, Lord President of the Committee of Council on Education.

Arnold wished to marry and it was to provide him with a secure livelihood that in 1851 Lord Lansdowne recommended him for an inspectorship. Yet, as one of his biographers has pointed out, he had at the time, few obvious qualifications for the post. Rugby and Oxford had done "little to prepare him for the problems of giving the working classes basic instruction".

Nor was Arnold's temperament particularly suitable: In the view of a contemporary he was a "gentlemanly young man with a slight tinge of the fop", and a reputation of flippancy.

Similarly, a few years later the then Lord President, the Marquis of Salisbury, recommended the curate of his home parish of Hatfield for appointment and followed this up a month or two later with the nomination of a friend of his son.

The reminiscences of other inspectors show that the practice continued into the later years of the century. In 1875, A. J. Swinburne, after an undistinguished academic career at Oxford, secured a position, as he freely admitted, "through the patronage of the Duke of Richmond, which was procured for me by Lady Wynford, a friend of my aunt, Mrs Vicars.

Another successful candidate, T. G. Rooper, obtained the help of the Duke of Bedford, whose son he had tutored. Not surprisingly, Rooper was a firm believer in a university education for inspectors. In 1892, he wrote to a friend: "Now I believe in the universities and if men say there is not much learning in them (which I deny) at any rate elsewhere there is none at all. If the teachers want to be made inspectors they must get a university training".

Against this background it was little wonder that Sir William Harcourt could comment that he had heard that "there were no appointments that had been jobbed more than those of school inspectors".

Yet perhaps the most controversial of the late nineteenth century appointments was concerned with the first promotion from the ranks of inspector's assistants—something for which the NUT had been pressing for years.

But the man selected, Sydney Marvin, was not a typical product of the elementary system in either background or training. Whereas most teachers were the offspring of artisans or small tradesmen, he was the eldest son of a middle-class London family and after an education at the Merchant Taylors' school and St. John's College, Oxford, he became in 1887 a teacher at an elementary school in Oxford and later in Bow.

He found the drudgery of this little to his liking and in the summer of 1889 he sought the help of his friend and mentor, the barrister and Positivist thinker, Frederic Harrison. The latter was an acquaintance of the Education Department Secretary, Patric Cumin, and through him Marvin hoped to secure a post in the Inspectorate.

But the most that Harrison could obtain was an assistantship, which was clearly not what Marvin had in mind. But as Harrison pointed out: "I do not know what your means of influence are. But I believe the list of candidates for inspector is very large, and the pressure in their favour very great. Whilst the present people are in office, our friends will have little weight." However, he did get an assurance from Cumin that the assistantship would not bar his protégé's advancement.

Yet, up to then there had never been a promotion from the lower ranks to the inspectorate. It would seem that Cumin was agreeing to overturn his department's policy on HMI recruitment on the whim of friendship, though he may also have seen it as a way of meeting NUT demands for elementary staff promotions in form if not in spirit.

All that remained was for Marvin to pass the Civil Service examination required of all assistants, which he managed at the second attempt. In January, 1890, he entered upon his new position. But clearly he regarded this only as an interim measure and within two years was again asking for promotion.

After a little judicious pressure, and despite the fact that Cumin was no longer departmental secretary, his wish was granted at the beginning of January, 1892. He was then only 28 and in terms of experience, both as a teacher and an inspector's assistant, was obviously inferior to a number of his fellows.

It was not surprising that one of them should write to him rather bitterly: "How delightful it must be to be lifted out of a position which by our secretary's showing is destitute of dignity, and devoid of responsibility. Your apotheosis will prove a great, and, perhaps, a legitimate grievance to most of our colleagues. I shall not be one of the aggrieved, but in all future discussions will do my best to justify the action of the dept, in this case only."

But some NUT supporters were far less restrained. In 1892 a correspondent to the union's journal, *The Schoolmaster*, sourly observed: "It is well known that the rules of the department were flagrantly and openly broken to admit him into the Inspectorate. Notwithstanding that he cut a sorry figure at the Civil Service examinations."

Another critic demanded that future appointments should be confined to candidates with at least 10 years' teaching experience. And a question was even asked in Parliament as to why he had been promoted over the heads of more senior colleagues.

Yet however hurtful the controversy may have been to Marvin personally, it had one beneficial effect, in that it opened the way within months for other promotions from the ranks. Although progress from elementary teacher to inspector remained, painfully slow for a number of years, at least a start had been made.

At the same time Marvin's own career confirmed the views of those who saw the university-trained inspectors as taking a broad view of their duties. He began to give university extension classes from the time he became an inspector's assistant, and later took an active role in organizing courses and lectures for teachers in modern languages, history, and educational science.

In 1929-30 he was professor of modern history in the University of Egypt. And the good relations he enjoyed with teachers at the end of his career were, happily, now typical of those also enjoyed by his younger colleagues.

Before the 1890s, elementary school teachers were thought to lack sufficient "freshness and originality" to be appointed inspectors.

The author lectures in economic and social history at Oxford Polytechnic.

Cutting the cloth to fit the coat

B. M. James on the need for a fresh approach to course design in production engineering

With the general concern about the ability of universities and polytechnics to produce suitably qualified manpower to meet industry's needs, it is appropriate to ask whether the courses designed to meet a particular aspect of these needs—namely production engineering—are being conceived along the right lines.

There have been two traditional sources of professional manpower for the production needs of the engineering industries. There have always been some graduates in general engineering subjects who have been transferred into production; but the majority of those engaged in production have been craft and technical apprentices who have achieved their educational qualifications through part-time study.

Recent changes in engineering education, however, which have taken place under the auspices of the professional institutions, mean that it is now virtually impossible in practice to achieve professional educational attainment through the part-time route. Supply must therefore come from the graduate labour pool.

Yet undergraduate courses in production engineering are a relatively recent development. And many that have been established have been developed from mechanical engineering courses, with the course design having been carried out by a process of aggregation of course units, rather than any fundamental reassessment of needs.

Students have started with a core curriculum in the first academic session that would be found in a general engineering degree programme, or more particularly a course in mechanical engineering. It is only in the second academic session that production technology subjects are introduced, and in the later sessions that business studies and management topics are introduced.

What is really required is a systematic appraisal of the needs of production engineers to be carried out, and course design to be based on this. And to do this is not easy, since it seeks in the main to replace a practically-based system of day-to-day work experience with part-time education by one of full time education in an academic situation.

A partial means of providing a solution has been, of course, to introduce the *sandwich* course, which at least provides some real contact with industry and everyday industrial tasks; but this is of little use if the conceptual base of the course design follows the traditional concept that the way to produce a production engineer is to produce a good mechanical engineer, and then to train him in the technique of production.

Not only has this assumption little to recommend it in terms of the time spent absorbing useless educational materials but it also prevents the emergence of the right kind of educational product. Students with the right personality for production work are likely to find that learning inappropriate material makes such poorly-conceived courses unattractive; and it also introduces into production work those with unsuitable personalities and attitudes to the job.

Education and Industry

Further evidence for the inappropriateness of the current design of courses for production engineers comes from the survey which I have carried out of manufacturing engineers in relation to job knowledge and tasks, effectiveness of education received and important personality and attitudinal factors relating to work performance. Among the findings it was shown that the basic knowledge required in the job derived not from traditional engineering science but from production science and technology and management and business science:

The use of particular subjects in production engineering

Subject Group	Mean Rate of Response (For 70 persons for each subject listed in group)
Production Science	28.70
Management Science	14.88
Engineering Mathematics	12.96
Engineering Science	12.91
Statistics	8.92
Business Science	8.31
Modern Applied Mathematics	2.20
Environmental & Social Science	1.80

"Production engineering" courses were found most useful to persons in these jobs, although many had studied mechanical engineering courses to obtain advancement in the firm, showing once more the adverse influence of educational traditions.

To meet the everyday needs of the engineer in production and to provide him with the capacity for advancement to positions of management in the future in his career, the undergraduate requires a base of technical studies that parallels the skills required by persons classified as technician engineers in production.

To this must be added what in the everyday sense distinguishes the professional engineer from the technician engineer, namely the development of the skills for management.

To produce such a course design would, in the eyes of many engineering educators, involve a dilution of technical expertise, who would still insist that the technical knowledge of the production engineer be still very much based in the mainstream of engineering education.

It is certainly true there is the need for the manufacturing systems designer, responsible for the evolution of new automatic systems of production. It is also true to say that the production engineer must be familiar with techniques of machine and industrial systems control. But he must first be able to understand processes, materials, methods, and the costing of and quality of manufacture.

The author is senior lecturer in ergonomics at North East London Polytechnic.

Fees and pay: when will the Government act rationally?

Gerry Fowler, MP, argues that more foresight is needed in the financing of higher education

A decade ago, all the ex-colleges of advanced technology (CATs) had completed their transmutation into universities, and the new universities founded in the period of euphoria immediately pre and post-Robbins were beginning to find their feet. Student numbers were rising rapidly. The University Grants Committee had moved from under the aegis of the Treasury, but was able to report that it suffered no more interference in its work from the Department of Education and Science than it had from its former sponsor. The quinquennial system of financing, administered by a body at arms length from Government, was secure.

In 1967 there seemed to be few clouds in the university sky. Even the stories in the popular press about universities were usually favourable. True, there was a row about the Government's decision to allow the Comptroller and Auditor-General and the Public Accounts Committee of the Commons access to UGC and university books, in the interest of financial propriety. But in the event that had little effect upon the universities.

There was also a row about the late Tony Crosland's decision to recommend sharply increased fees for overseas students, and to take account of the new level in fixing the total Government grant to the universities. But it was essentially about a moral question—whether or not we should discriminate by the purse against non-British students.

Other methods of discrimination—by quota, for example—were not widely canvassed. More significantly, few suggested that discrimination should be eliminated by raising all fees, for overseas and for home students alike, thus making universities more dependent upon fee income (i.e. upon attracting students who could pay) and less upon UGC grant.

Ten years later, in the gloomy seventies, these latter elements—an overall limitation on overseas student numbers, and a general rise in the proportion of university income derived from fees—have begun to loom large in controversy about higher education policy.

Last summer some Ministers (myself included), forced to find savings from fee increases, sought to eliminate discrimination—the root cause of the 1967 controversy—by bringing home student fees up to the same high level as would apply to overseas students. We know the consequences. But perhaps we all are creatures of our own pasts; I had spoken on many occasions against the discrimination introduced in 1967.

We ended up with the worst of all worlds. We were able to protect home students in receipt of awards by arranging that from 1977-78 fees would be paid in full, irrespective of parental income. But we could not help those who did not receive awards from public funds—including a substantial proportion of postgraduate students, and those taking repeat years on undergraduate courses or second first degrees. Nor, if the required savings were to be achieved, could we avoid an overall limitation on overseas student numbers.

Discrimination

An announcement of the new system was made. The UGC, the universities, the l.e.a.s and of course the National Union of Students, proclaimed their opposition to it. That was, in my view, a profound error. As might have been foreseen by the politically sophisticated, the Government held firm on the total savings it required.

But it obligingly conceded that perhaps it had fixed fees for home students at too high a level, thus deterring some from continuing their studies. The final settlement therefore reduced them, though not by enough much to affect the deterrent effect, and fees for overseas students were increased again, in order to compensate. Discrimination was re-introduced, and nothing had been achieved.

In the late 1960s, a sharp increase in the proportion of total income to be derived from fees might have been acceptable to the universities at least. It would have been less acceptable to the new polytechnics, some of which faced several years of struggle to establish their attractiveness to students.

But the increase in demand for places than far exceeded the Robbins projections. Most universities found little difficulty in exceeding the student number projections upon which their UGC grant was based; a high fee level would thus have given them more cash for the same number of students.

Today, the percentage of the 18-year-old age-group seeking higher education is increasing only slowly, and the age-group reaches its maximum size in 1982. Thereafter, the decline in size is at first slow, then becomes very steep for several years at least, as the low birth rates of the 1970s have their effect.

I have argued on other occasions in these columns that it is possible to stimulate greater demand among young people, and that the introduction of a system of paid educational leave for adult workers, further increasing the number of potential applicants for higher education places, is desirable.

Let us, however, assume that by the late 1980s no such measures have been taken. Let us assume, too, that further increases in fee levels have ensured that fees continue to account for 20 per cent or more of university income. Neither assumption is irrational.

Neither the trade union movement nor the Manpower Services Commission seems to have much interest in paid educational leave; here Britain contrasts unfavourably with Sweden or France. And as Dr Keith Hampson never tires of reiterating (without support from the official Opposition spokesman on education, who are still fighting the secondary battles of long ago), the Government is committed by its announced public expenditure plans to at least one more steep increase in fees.

In that case, institutions of higher education must, for financial reasons, compete vigorously with each other for students. While we await the outcome of the Oakes Committee deliberations on the financing of the public sector, the effect of such competition on the polytechnics and other higher education colleges is unpredictable.

But if universities continue to receive a grant fixed in advance and not directly related to the number of students accepted, they must have every incentive to maximize the number of students that they take, and thus maximize their income.

Such competition would be most acute in the less popular disciplines, or those where there is at present—perhaps for reasons of deliberate policy—a national over-provision of places. Some will doubtless argue that we shall get better value for money from the universities if they thus become subject to the discipline of the market-place.

It is equally possible to argue that such a system must result in overcrowding of some universities or faculties and in spare capacity in others, in a lowering of standards in order to compete more effectively, and in the forced closure of some courses and departments which it has been overt national policy to encourage—notably in science and technology.

It is not my purpose here to adjudicate between these opposed views, but merely to point out that neither forms the basis of present Government policy on fees. That has no rational basis whatsoever, save the determination that some money spent on higher education must be saved somehow.

It was originally argued that to reduce the allegedly heavy subsidy to overseas students was a justifiable way of doing this in the country's present economic circumstances. In the end, the policy which was adopted entailed a significant transformation of the system of university financing, which few foresaw and none had considered in detail.

If we turn to the detailed calculation of fee levels, the process loses any semblance of rationality. It starts with the determination of an *average* cost per place in higher education. Average recurrent costs provide the justification for fee increases, although average amortized capital costs are provided, too, in case the Government needs a fall-back position.

Marginal costs, which alone would tell us how much the nation spends on educating overseas students on courses already running in buildings already provided, are impossible to calculate.

The value of university research must be disregarded too. It may be argued that the nuclear power industry, and much of the chemical, computer, and drug industries (to choose only a few examples) rest in their present form on university research—which has thereby paid for a substantial proportion of historic public expenditure on universities.

But this is much too complicated. The crude calculation therefore having been made, the next step is to fix a sum for savings, not by reference to the calculation but rather to fit the totals of public expenditure the Government currently allows itself, and then to justify that sum, when translated into fees, as accounting for only a minority proportion of the true recurrent cost of educating a student.

The original object of the exercise, recouping more of our expenditure on higher education from the overseas students who benefit from it, is secured by displacing poorer foreign students in favour of richer.

Academic salaries

This is called planning. If continued over a long period, it must lead to an almost random determination of the precise size and shape of the university sector, irrespective of the wishes of the UGC. From an educational point of view, its only merit is that it provides conclusive proof of the low standard of numeracy in Britain—a weakness which seems to extend to the Treasury, the Cabinet Office, and the highest levels of Government.

Another issue of a decade ago which has recurred in a new and more acute form, and points to similar conclusions, is that of the pay of university teachers. Here, two problems dominated the late 1960s. One was the system of negotiation, which both the Association of University Teachers and I, as Minister of State, thought we had solved when in 1970 we devised the present "Committee A" and "Committee B" procedure.

The second problem was that of the impact of Government pay policy upon university academics. One of the events which first led to accusations of increasing Government interference in the affairs of universities was the recommendation of the National Board for Prices and Incomes that part of the sum available for academics' pay should be set aside to reward teaching excellence, in the evaluation of which students might perhaps play a part. A vice-chancellor even resigned in protest, although in the event, this part of the report was never implemented.

In the mid-1970s, the Houghton Report enabled those working in the non-university sector to catch up, and at some levels even overtake, university pay levels. Promptly, and before any corresponding adjustment to academics' pay could be made, we entered a new and rigid phase of pay policy.

Everyone suffered, although relatively the worst affected were (strangely) vice-chancellors, whose recommended "top salaries" increase was deferred, while some directors of polytechnics, benefiting from Houghton, overtook them.

It was in part the complexity of the procedure for negotiating salaries which occasioned the delays ensuring that academic pay was caught under Phase 1 of pay policy before anomalies arising from Houghton could be corrected. (Though if the AUT had more clearly perceived the danger, they ought have settled in time.)

The procedure is inevitably, if unfairly, blamed for the result; and voices are heard demanding more direct negotiations between the association and the ultimate "paymaster", the Government.

"While cash limits on university grants persist, academics have little chance of a settlement above the Chancellor's norm, whatever other unions may extract."

That could of course increase opportunities for Government interference in the affairs of universities; we are not always consistent.

We are now beginning the year of a return to what is popularly called free collective bargaining. The bargaining position of university academics is not thereby enhanced. While cash limits on university grant persist, they have little chance of a settlement above the Chancellor's norm, whatever other unions may extract.

They may not even achieve the rectification of Houghton anomalies. Universities which attract a higher number of rich foreign students at the new fee levels (if they dare take the risk of Government wrath) may afford a few more promotions than the senior : junior staff ratio would normally justify. But there seem to be no other loopholes.

What is disturbing about this situation is that there is once more no indication that governmental planning has taken account of the effects of the long-term continuance of present policies. If Houghton anomalies are not corrected, there may be some drift of staff at particular levels from the universities to the public sector. That may even be desirable. But the consequences of university pay lagging behind pay in other sectors, and increasingly so over several years, are more serious.

The end of rapid university expansion, and the declining size of the normal student age-group in the late 1980s, are likely in any event to lead to promotion blocks among academic staff, and to a much lower recruitment of young graduates. In so far as they enter "productive industry", this may be welcomed.

But if salary differentials widen sufficiently, university teaching and research may be progressively starved of the highest talent. This would, if the tenure system remained, have long-term effects upon the quality of university work—with repercussive effects upon "productive industry".

Loss of quality

Furthermore, the rewards of academics may lag behind those to be found in other non-industrial sectors. Thus, if the comparability of senior Civil Service salaries with those in a range of outside employment is maintained, there is no reason to believe that high quality young academics unable to obtain university posts would mainly go to "productive industry" at all.

Much could be lost for little gain—and especially in those disciplines, of an "applied" or technological orientation, which the Government affects to believe have so much to contribute to the nation's well-being through their teaching and research.

It is, of course, possible in principle to devise means of avoiding these consequences. There could for example be full supplementation of university grant in respect of negotiated salary increases for academic staff.

But that would seem inconceivable in the foreseeable future, since it would remove Government's only effective weapon for the control of pay in this part of the public sector. (Government undoubtedly counts the "autonomous" universities as public sector institutions for this purpose.)

Alternatively, university academics could accept the principle of comparability of pay with specified Civil Service grades (although this would clearly be seen as a further erosion of "autonomy"), or with a specified range of private sector occupations. But the Treasury has objected to either suggestion.

Even the narrower objective of securing permanent comparability of pay throughout higher education would be acutely difficult to attain, because of the mixture of advanced and non-advanced work in non-university institutions.

The proportion of university expenditure which is formed by pay and pensions will give rise to still greater financial problems once there are nationally agreed rates for all grades of non-academic staff. That day cannot now be long delayed, if only because the end of rigid pay policy will give the increasingly better organized non-academic unions new opportunities to "pick off" recalcitrant universities one by one.

Whether it is desirable or not, the universities must now be seen as forming a national system—a development which has proceeded slowly but inexorably since the inception of UGC financing.

Recognition that the universities form a national system might make possible discussion between the interested parties—the UGC, DES, the CVCP, the AUT and the non-academic unions—of the structure of pay, as well as of fees, before future university grant settlements were announced.

Such national discussions would parallel UGC visitations to individual universities. If any "[illegible]", "[illegible]" rather than "[illegible]" because details of pay would have to be settled after the announcement, and doubtless on an annual basis.

It is time for wider public debate of these complex issues. We must evolve a system of university financing which makes less likely a repeat of the unpleasant events of the past four years, and allows an escape from some of the possible consequences of the mere continuance of present policies.

In the long run, the regionalization of many Government functions ("devolution"), including perhaps the financing of higher education, may change the nature of the problem. But in the long run we are all dead.

The author is Labour MP for The Wrekin, and a former Minister of State at the Department of Education and Science.

Gearing postgraduate grants to PhD prospects

John Sutherland and Stephen Fender discuss the implications of a survey of completed PhDs in English

There are good reasons for reviewing the present state of postgraduate studies in English. The profession itself is scarcely recruiting at present; the PhD is—ideally at least—a book, and academic publishing is in the doldrums; above all, the recent rise in fees has raised the issue of entry into postgraduate study.

Most British undergraduates will continue to have their fees, whatever their level, funded by local authorities, at least as long as the government support grant continues to match the demands of the local authorities' education budget. But only a proportion of British postgraduate arts students have their fees and living expenses paid, and most of these by grants made direct from the Department of Education and Science.

The sudden rise of postgraduate fees, by over 300 per cent in one year to £750 a year for home students and £850 for overseas students, brings the total annual cost of postgraduate study to around £2,250—assuming expenditure on basic food, lodging, travel, and books of about £1,500.

What these figures mean, of course, is that henceforth students reading for PhDs in arts subjects will be mostly either wealthy, foreign, or supported by the DES. How successfully, then, does the DES disburse its money?

The British student aspiring to read for a PhD applies to the DES, usually during the course of his or her final undergraduate year, for a major state studentship. In practice, the award seems to be made to virtually everyone getting both a first-class degree and the backing of his department, though a number of applicants have also succeeded with good upper seconds and especially strong departmental support.

When the student applies, the questions of what is to be studied, and where, are usually academic in both senses of the word, since the award is made to the candidate in early summer, just after the degree results become available. This is often before the applicant has made firm decisions about his or her future course of study. In effect, the DES grant is a passport and an unqualified endorsement of any research a candidate may decide on.

With the DES apparently planning to reduce the number of its awards in order partly to compensate for the increase in fees it has decreed, the first-class degree will become even more important.

But how accurately does the first indicate the qualities needed to pursue postgraduate research? On the face of it, the two examinations seem to call for quite different qualities: the former for the ability to analyse disparate data, to argue a case with flair and originality, to present a brief; the latter for curiosity and the bloody-minded stubbornness needed to keep one working at a solitary task for years.

The first-class degree, in other words, would seem to indicate high administrative skills of the kind apparently so badly needed in the Civil Service and British industrial management.

Success or failure at the undergraduate level is precisely measured. At the postgraduate level the matter is much less clear. Most university English teachers to whom we have spoken have only a vague idea of what proportion of their postgraduates "succeed".

Table 1: Time taken to complete study for PhD degree in English Candidates entering from 1965-72, inclusive

Number of years	Number of candidates completing	Percentage of total completing
2	28	15
3	70	37
4	47	25
5	17	9
6	15	8
7	9	5
8	4	2
9	0	
Total	190	

Many might be surprised to be told that of our large sample taken from London University students of English, only about one-third of all entrants finally won through to a PhD. Admittedly this figure is less alarming than it appears; success with the PhD may be anticipated by the greater success of securing a permanent job.

The completed PhD is not the *sine qua non* for British university teaching that it is for American. (Out of the last seven appointments to the English department at University College, London, for example, six either had incomplete PhDs or no PhD ambitions whatsoever.)

Even with these reservations, however, we felt that some attention should be paid to the success rate of PhD studies. We examined the performance of the 560 research students writing theses in English in the University of London, entering from 1965 to 1972.

We took "success" to be simply the number of those students completing and passing PhD theses, set against the number entering for the degree of PhD and MPhil. (In practice, those entering for the MPhil generally do so in hopes of being promoted to read for the PhD.) Candidates who take more than five years over their study we define as incomplete; a justification for this arbitrary definition is evident in Table 1.

Since there is no enforced cut-off date for postgraduate students the number of registered withdrawals is small. Similarly, once a candidate has written and presented his thesis, the chances of failing absolutely are relatively small. The typical PhD failure is a student who drags on, year after year, without getting his material into presentable form.

Of the total number of successful applicants, more than 75 per cent completed their studies within four years, after which the number completing dropped sharply.

Our first surprise was the discovery that only 34 per cent of those entering completed (190 out of 560), but a sample of other British departments of English (one old, one new, one Scottish, and one urban redbrick) suggests this figure is about average. If one includes the MPhil completions, the success rate rises above 50 per cent.

Table 2: Completion rate of research leading to PhD in English (Candidates entering 1965-72, inclusive)

	Number completing	Number registering	"Success" as percentage of numbers registering who completed
UK and Eire, 1st class	25	74	34%
UK and Eire, 2nd class	58	250	23%
UK and Eire, 3rd class and unclassified	5	23	21%
Commonwealth, 1st class	33	56	59%
Commonwealth, 2nd class	20	37	54%
Commonwealth, unclassified	16	55	29%
US, *Magna cum Laude*, etc*	4	7	57%
US, unclassified	26	55	47%
Europe	1	3	—
Near East	2	0	—
Totals:	190	560	33.9%

Note: * *Magna cum Laude*, *Phi Beta Kappa*, etc, are honorary titles denoting roughly first-class degree work.

The more remarkable figures, perhaps, are found in the breakdown of the totals of those completing into countries of origin. The most successful candidates came from overseas universities.

There are good reasons why this should be so. The foreign postgraduate is highly motivated and probably has good reasons for wanting to work in London. A large proportion of these students is part or wholly self-financed. Whether they will be able to finance themselves in the face of the recent fee-increases is another matter.

The 34 per cent success rate for British candidates with first-class degrees is also interesting. In the uncertain, often lonely, world of the research student the assurance that one has been certified first-class by the very system that is now guiding, and will eventually examine, one's work must be counted an enormous advantage. Then there is the more material assistance of the DES studentship.

Why, then, is the completion rate of our first-class candidates at London only average? Is this not an area where something can be done, even within the fees straitjacket which the DES has imposed on postgraduate studies?

In a situation where the grant of state money effectively selects the British postgraduate, we would propose that the DES reserves at least some of its awards for candidates found desirable by other criteria than undergraduate excellence.

This reserved money might be disbursed on recommendation of the department responsible for the postgraduate supervision. Its beneficiaries might be hardship cases; they might be people who had put in a year without financial support and who now needed help to complete a provenly valuable task; they might be late entrants or applicants with academically unorthodox backgrounds.

Such grants might be far smaller than the present annual DES awards, covering fees only, for example. This would be particularly useful in the case of part-time registrations.

A scheme like this would channel at least some public money into specific research through students known to be capable of that research, and with a better than average chance of completing. If it also diverted some funds from first-class minds thought to be capable of virtually anything, then our own brief investigations suggest that this would be no bad thing.

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An image of politics as violence, not as authentic conflict

Bernard Crick reviews Howard Barker's *That Good Between Us* at the RSC's new Covent Garden theatre, The Warehouse

The first thing you need to know is how to get there. Their advertisements say "Covent Garden". Theatre folk know it as the old Donmar rehearsal rooms. Going by streets and the *A-Z*—if you have a magnifying glass—it is at the corner of Earlham and Neal Streets. A practical tip is to get lost around Seven Dials and you will find it easily; a warehouse indeed, with plastic seats for 200 uncomfortable devotees.

The next thing you need to know is how the Royal Shakespeare Company got there. Why does one of our two great national companies try to muscle in on the fringe? And what muscle! Bad enough that the National Theatre has its official fringe and planned spontaneities. Why RSC too?

That is one view of it. Have I loaded the question by saying "fringe", or have they by opening with Mr Barker's play? If I had said "small-scale theatre", the answer as to how they got there would be: because they have done it before so well.

There is The Other Place at Stratford; and before that there were the late Buzz Goodbody's memorable two short seasons at The Place in Duke Street, with at least two expeditions to the Roundhouse, including her intense and truly great *Lear* and then *Hamlet*. And modern plays, of course, good and bad, established and new, even (very rarely) experimental.

Great companies need no excuse to offer more of the same great mix that they do already. The demand for good theatre is so much greater than the supply. The present sold-out season of the Prospect Company at The Old Vic, however, shows that London can take even a third first-class company.

The RSC have particular need, not only to spread joy more widely, but to stretch their company far wider than Shakespeare, if each generation of actors is not to lapse back into acting the great William in the old bardic or Regents Park declamatory manner.

I come to the play at last. Let's not pretend. The programme note gives a clear enough summary. "This latest play by Howard Barker about spying is set in the immediate future under a Labour government. It portrays an England approaching a state of anarchy, with a left-wing conspiracy inside the Army, and its penetration by Special Breach."

For Mr Barker has provided an infernal cross between *If* and *The Clockwork Orange* in the mode of a Maoist tract, full of theatricality, totally lacking in dramatic tension. It is a paranoic fantasy of what the social democrats and their capitalist mates are "really like". Those whose politics are theatrical will come to the theatre for reinforcement.

A series of scenes succeed each other at great pace. It is pure modern cinema: like *If* or *Illustrious Corpses*, violent images and arbitrary and unreasoned assertion.

First we see Knatchbull (Patrick Stewart) the Special Branch man, dumping an expended agent into the sea, the working-class youth McPhee (Ian McDiarmid) whom the system has driven crazy. At the end of the play (a flashback in his mind) he is struggling ashore, naked and even more crazy (credits are given to the Scottish and Newcastle Breweries Ltd, but not to Mr William Golding).

Soldiers are strike-breaking, catching and beating horribly a communist. A left-wing girl (Cherie Lunghi) sadistically mocks her mother (Barbara Leigh-Hunt)—the Home Secretary in a Labour government, a crude caricature of Shirley Williams with a dash of Dr Shirley Summerskill.

The mother tries to restrain the secret service man, but with what are meant to be fatuous words: "Don't devalue the language or you'll end up doing violence to people". Actually *his* language is not too bad (Mr Barker's working class all speak, a rigid convention in the fringe, in a vocabulary of three words—fuck, piss and cunt—with tonal modulations).

"There is a democratic officer at large. He drinks with rankers, and that means one of two things. He's either a queer or he's political." The officer is called the Major.

Then a gang rape scene. "Relevance? It shows how McPhee was [illegible] an agent. The scene is pointless. I pity the actress and the three actors too, as night after night, naked, filthy, they *simulate* copulation (I suppose it is difficult to achieve an actual erection in such circumstances).

I neither cry to Equity nor to Mrs Whitehouse, only to the gods of drama to remind young producers that all this is melodrama, it no longer shocks, it devalues and distracts from any serious reaction.

Next scene. Knatchbull and his crippled child, of course, discover the corpse of a tortured soldier—a member of the cell who did not tell. She revels in it and only gives up fingering the corpse to go and watch *Blue Peter*.

A scene in a pub where the communist army cell hold an open meeting: "The English revolution will not be secret", says the major, although oddly rankers must all be Irish for they say they adore him for "going among the people when in Derry".

Ian McDiarmid as the agent McPhee, and John Nettles as Godber.

[illegible] Home Secretary tells the police: "We are struggling to preserve a free society as we know it" (Mr Barker rises to such heights of satire) and licenses them to arrest and kill at will (as we know they would if they could act out their fantasies as we are acting out ours).

Arrests follow at a funeral (in Kilburn?). There is a slight dramatic digression while daughter opens her legs to another agent who has tried unsuccessfully to seduce her mum, before the daughter and said agent takes the now thoroughly democratized McPhee down into hiding in Cornwall.

They go on bicycles, because bicycles look interesting on a stage, and they go to Cornwall so that there can be the last scene of McPhee being dumped from the boat and swimming ashore. Perhaps, through desperate agony, the common people will survive their class oppressors.

The formal justification for all this is numerical. Howard Davies, who is now the RSC's *dramaturg*, told Sheridan Morley of *The Times*: "We are being very careful not to tread on the toes of the fringe companies; I've only chosen plays that have a cast of 16 or more and are therefore out of the financial reach of pub theatres."

Mr Davies has also commissioned a new play by C. P. Taylor, *Bandits*, and three plays are being transferred from The Other Place at Stratford: Edward Bond's *Bingo*, Bertold Brecht's *Schweyk in the Second World War*, and William Shakespeare's *Macbeth*.

So perhaps looking at the whole repertoire, beginning with Howard Barker is trendy bluff and need not be taken too seriously, or simply the price of experiment—but no real experiment, only a been bag of cinematic and dramatic clichés, images of politics simply as violence rather than as the conflict of authentic antagonists.

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Humphrey Institute to educate the public man

A campaign to launch a Hubert H. Humphrey Institute of Public Affairs has been launched by the University of Minnesota.

Vice-President Walter Mondale will chair the campaign committee, and fund-raising has already begun with a personal pledge of $1m from the chairman of the University of Minnesota Foundation.

Mr Humphrey, senior senator from Minnesota—also the home state of Mr Mondale—was Lyndon Johnson's Vice-President and the Democrat presidential candidate against Richard Nixon in 1968. He has long been an advocate of higher education and active member of the Senate Foreign Relations Committee.

The projected Humphrey Institute would expand the existing University of Minnesota school of public affairs, adding several endowed chairs and privately supported visiting lectureships. Vice-President Mondale said it would "be dedicated to the recruitment, encouragement and education of young men and women who show promise in political life and who have the potential of serving with the same undaunted spirit of optimism that is the worldwide trademark of Hubert H. Humphrey".

The director of the existing school said the institute would train students to be professionals in public affairs, offer in-service courses for those already in the field, examine current public policy and pay particular attention to the legislative process. It will also provide a permanent working office for Mr Humphrey, when he retires from the Senate.

The campaign's goal is eventually to build the Humphrey Institute into an academic centre on the scale of the Lyndon B. Johnson School of Public Affairs in Austin, Texas, which has funds of more than $22m. In its first phase, the Minnesota campaign hopes to raise about $7.5m.

Senator Humphrey is as closely identified with Minnesota as President Johnson was with Texas. A graduate of the university, he was mayor of Minneapolis between 1945 and 1949 and, from then on, represented Minnesota in the Senate except during his vice-presidency.

The Lyndon B. Johnson school was established after Johnson's retirement from the Presidency and has quickly established itself as the foremost centre for international affairs in the South. Its very large library includes all the papers relating to Johnson's turbulent years as President.

The school has just announced the start of a massive $700,000, five-year project to prepare the administrative history of the Johnson presidency. Dr Emmette Redford, professor of public affairs at the University of Texas, who will direct the project, claims it will be the first comprehensive administrative history of a twentieth-century president.

Humphrey: undaunted optimism

French language charter puts future of McGill in doubt

McGill, the principal university of Quebec's English-speaking minority, fears that if a Bill referred to as "the charter of the French language" is not amended before passage by the Quebec National Assembly, the university's existence could be endangered.

In a brief presented by the university to the legislative committee hearing argument regarding the Bill, McGill said statistics showed that if all anglophone parents were not permitted to send their children to English-language schools, the numbers in those schools could shrink by 57 per cent by 1986.

"As 60 per cent of the admissions to McGill are from the Quebec English schools", said Dr R. E. Bell, principal and vice-chancellor of the university, "It is easy to understand our anxiety in the face of the education provisions of the Bill."

"A university such as McGill with its present commitment could not operate successfully on a continually shrinking English-speaking population base especially if the flow of students and faculty from outside Quebec also is restricted by consequences of this Bill, as it inevitably will be."

According to the Bill, although more freedom of choice would be allowed during the period of transition, eventually only those children having one parent who received elementary education in English in Quebec would be able to attend English public schools in that province. All others would go to French-language schools.

Data presented by the university in its brief were used not only to show how the Bill would restrict the pool of students from which McGill draws, but also that the Parti Québécois government of the province was needlessly worried about the prospect of a diminishing role for the French language. Indeed, the university argued, the status of French is improving.

The brief made it clear that the university was opposed to the imposition of unilingualism by law. It agreed, however, that it was desirable to have a common language and that "in Quebec matters, that language should be French".

During the public discussion of the brief, Dr Camille Laurin, the provincial Minister of State for Cultural Development who was sponsor of the Bill, assured the university that he was as concerned for McGill's survival and development as were all Quebec anglophones. He quoted different statistics, however, to support his contention that the menace to francophone culture was the more real.

Five years to desegregate

Six southern states have been given five years by the Department of Health, Education and Welfare to desegregate their public colleges and universities. New criteria have been submitted to court by the department in response to a long-standing suit taken out in 1970 against the Secretary to force him to end dual systems of higher education for blacks and whites.

The six states—Arkansas, Florida, Georgia, North Carolina, Oklahoma and Virginia—must now submit revised desegregation plans within 60 days after receiving the criteria. The Office of Civil Rights will accept or reject the plans within 120 days after that.

Four other states were originally involved in the suit. Mississippi, which submitted a "wholly unacceptable plan" and Louisiana, which submitted no desegregation plan, were referred by HEW to the justice department which has brought suits against them. Maryland brought a suit against HEW, and Pennsylvania reached a settlement with the department.

Mr Joseph Califano, the HEW secretary, said the criteria submitted to court had been developed "through a broad process of consultation". He admitted that not everyone the department consulted agreed with all the details of the proposals.

Mr Califano said the new guidelines would "both meet the requirements of law and provide a strong framework for desegregating these state systems in a manner that achieves equal opportunity for all races, enhances educational excellence and maintains the academic standards of these colleges".

The criteria set out specific timetables and goals—and Mr Califano was keen to emphasize that he meant goals not quotas. The department was opposed to the use of arbitrary quotas in civil rights enforcement, he said.

Failure to achieve a goal set forth in the criteria would not alone be evidence of violation of civil rights laws, but the goals did set out specific benchmarks which would help measure progress toward the elimination of unconstitutional *de jure* racial segregation.

The most important features of the new plan are that at the end of five years there should be an increase in the total number of black students attending public colleges, and equal proportions of black and white school leavers should go on to public undergraduate institutions.

The primary goal was to increase black enrolment in all colleges whether predominantly black or white, two-year or four-year. Mr Califano said Arkansas and Oklahoma were already close to achieving this.

The second most important goal was that there should be more blacks at four-year white colleges by the end of five years. Every white university should show some annual increase in black enrolment, and efforts should be made to reduce the disparity between the relatively low percentage of black students who go to white colleges and the high percentage of whites who go to such institutions.

"Within five years", he said, "the disparity should be cut by one half on a statewide basis. For example, if 20 per cent of white high school graduates go to white four-year colleges, and only 10 per cent of black high-school graduates enrol at white four-year colleges, then within five years 15 per cent of black high-school graduates should enrol in white four-year colleges."

Other goals include an increase in the number of white students attending black colleges; an increase in the number of black college teachers and administrations; the allocation of equivalent resources to equivalent institutions, regardless of whether they are predominantly white or black; the same proportion of black and white graduates at public colleges going on to professional and graduate schools, and official state action to reduce the disparity between graduation rates of whites and blacks.

The new guidelines have been given a cautious welcome by civil rights activists, though one spokeswoman for the Legal Defence Fund said it was "outrageous" that the six states were being given five more years to desegregate.

After Mr Califano's announcement an association of 107 black college presidents said they would monitor the guidelines and the state plans to ensure that educational opportunity including achievement and attainment was expanded for black Americans.

The dismantling of the dual system of black and white colleges is exceptionally tricky, perhaps even more so than desegregating schools. The problem is that, when segregation was the rule, many black colleges grew up which established an excellent reputation in the black community.

To expand the number of blacks at white colleges and at the same time increase the number of whites at black institutions inevitably poses a threat to historically black colleges. Although in some states—notably Mississippi—there is a high proportion of blacks in the population.

There may come a point when black colleges cannot find enough black applicants to remain black and, in all desegregation efforts, the Federal Government has recognized that black colleges do play a valuable role and should retain their black character.

A recent survey of more than 1,200 undergraduates at member colleges of the United Negro College Fund (UNCF) found that the majority prefer a black institution. These colleges, are private and not part of a state system, but they reflect the attitudes of the black community.

The study found that 57 per cent of students said their main reason for choosing a college was because they wanted to attend a black institution. The second most popular reason (given by 38 per cent) was the college's academic reputation. A total of 35 per cent said the opportunity for financial aid was a prime consideration.

"These documented findings reinforce the assertion that UNCF colleges are fulfilling a deep-rooted need in black America", said the fund's chairman.

Mr Califano has recognized that, in desegregating public colleges in the south, it would not be possible to insist on equal attendance rates for blacks and whites in five years time. He said the goal should therefore be only an interim objective. Once it had been met there would be further discussions between HEW and the states as to whether any further steps would be needed to integrate four-year white colleges and universities.

Major expansion proposed at prairie 'open university'

Professional staff at Alberta's Athabasca University have submitted a five-year development plan calling for an increase in courses from six in 1976 to at least 66 in 1981.

Athabasca, an open university sponsored by the province's Department of Advanced Education and Manpower offering tuition for adults wishing to study in their own communities who are not able to attend traditional post-secondary institutions, was incorporated in 1976, all but five per cent studied granting institution in 1975.

Of the 442 adults enrolled in 1976, all but 5 per cent studied part time, 58 per cent were women and 73 per cent were 23 or older. Backgrounds ranged from elementary schooling to university graduation and more than half lived outside the large cities.

To meet the needs of such students, and to complement facilities available in Alberta's three other universities, ten community colleges, two institutes of technology and three adult vocational centres, the development plan calls for "degree level studies which are, to a large extent, individualized, free from both time and distance constraints, and directed toward adult students".

Degrees to be offered are the BA and BSc, with relatively conventional curricula, and a Bachelor of General Studies, which may be general or vocational, or both, and awarded entirely on the basis of credits earned at other post-secondary institutions. All three degrees are the equivalent of three full-time years' study.

While most reliance would continue to be placed on correspondence instruction, the university proposes to explore the possibilities of radio, television and computer-aided education. As many as 35 local and nine regional learning centres would be set up.

Scientists fight local curbs on genetic experiments

American scientists are becoming seriously alarmed that legislation before Congress to regulate recombinant DNA experiments is so strict that it will stifle research.

Ironically, the legislation, which is the result of considerable public disquiet over the safety of some genetic experimentation, comes at a time when scientists are now generally convinced that such work can be done in complete safety.

Scientists have therefore begun an intensive campaign to try to water down the proposals they find most objectionable in the Senate Bill introduced by Senator Edward Kennedy. These include the suggestion that local committees should be allowed to impose their own specialists in research on nucleic such research altogether.

In recent weeks, 277 participants at two of the Gordon research conferences in New Hampshire have signed against the proposed legislation. The conferences, each summer, bring together top researchers in a variety of fields.

One document was signed by 137 specialists in research on Nucleic acids, including DNA. The second was signed by 140 of 164 biologists at a five-day meeting on biological regulatory mechanisms. It said "no indication of actual danger has been uncovered", and called the proposed regulations unprecedented "prior restraints" that could "deprive society of needed improvements in public health, agriculture, industry and environmental protection".

Other groups have told Dr Donald Fredrickson, director of the National Institutes of Health, that they unanimously agreed that the bacteria to be used for experimentation could not be converted into an epidemic pathogen by laboratory manipulations with DNA inserts.

The Senate Bill provides for an 11-member National Recombinant DNA Regulation Commission to be appointed by the President. Six members would be chosen "who are not and have never been professionally engaged in biological research". The other five would be specialists in such research but with no financial interest in recombinant DNA activities. The commission would be empowered to regulate and license the research and send inspectors to ensure compliance.

The Bill before the House of Representatives is less strict. The Secretary of Health, Education and Welfare would promulgate the regulations subject to "recommendations" by a Recombinant DNA Advisory Committee. Of the 17 members of such a committee, a majority would not be engaged in DNA research, but some in the majority could be biologists.

Details of licensing procedures would be left to the government and local bio-hazards committee could do the inspections under government auspices. In case of violation, one Bill provides for fines up to $10,000 a day. The other allows fines as large as $50,000.

Many researchers are worried by the prospect of ill-informed regulation by local governments, and hope that the eventual compromise Act, which will go to Mr Carter for signature, will be more like the House Bill than the Senate's. Most scientists believe that the guidelines set out last summer by the National Institutes of Health are perfectly sufficient and reasonable.

The scientific community in America signed a voluntary moratorium on this research a few years ago. Among those who signed was Dr James Watson, one of the two Nobel prize winners who did the original work on the structure of DNA. He believes that the call for caution has almost resulted in panic.

Somalia

Where students are teachers

by Graham Hancock

Somalia, one of the world's poorest and least developed countries, has a 2,000 mile Indian Ocean coastline and shares borders with Ethiopia to the west and Kenya to the south. Its four million people are mostly pastoral nomads and subsistence farmers scratching a living from the threadbare savannah lands of the interior.

Until unification on independence in 1961, Somalia was divided into the British Somaliland Protectorate, based on Hargeisa and Berbera, the two main towns in the north, and Italian Somaliland, administered from Mogadishu in the south. Quite apart from seemingly intractible poverty, the new Somali Republic inherited two quite separate systems of education: Somalis in the north studied through the medium of English, while those in the south were taught in Italian.

Both systems, however, shared a common characteristic: many were called but few chosen. Because there were only two secondary schools, with a combined intake of about 100 pupils a year, the vast majority of pupils left school to join the unemployed on the streets of Mogadishu and Hargeisa.

Their frustration was exacerbated because they had been brought up within the wholly inappropriate ethos, imported from Italy and Britain, that saw new industries and services in modern towns as the engine of all progress.

The little education they had received, geared as it was to the needs of a small minority for an examination certificate, was largely irrelevant to the mainly rural and agricultural employment opportunities which were open to them. Furthermore, education in Somalia in the 1960s was, almost exclusively, an urban affair. Out of approximately 800,000 children between five and 14 only a few ever went to school. In 1969 the total school population was less than 50,000.

At the apex of this system was an institute of higher learning known undeservingly as the Somali National University. Based in Mogadishu, it was not recognizably different from the *Scuola Politica Amministrativa* established there by the Italians in 1954. It was basically a two-year post-secondary school where the elite went to study economics and law.

Teaching was mainly confined to courses related to the practical management of government business and, because it could not award academically recognized qualifications students were packed off for a further two years to Italian universities to complete their degree requirements.

However, on October 21, 1969, a bloodless military coup installed a radical thinker, Major General Mohamed Siyad Barre, as head of state and, backed up by a Supreme Revolutionary Council of like-minded army men, a determined start was made to build a new society based on scientific socialism, social justice and the right to work.

Somali education no longer seeks to cream off a small number of successes from a mass of failures. Its main aim is that all people should have the opportunity to acquire information and understanding relevant to their everyday lives including basic literacy and numeracy, awareness of preventative medical requirements including nutrition and sanitation, house improvement and construction skills; techniques for increasing agricultural production and other appropriate technical knowledge.

The fundamental step that the new government took was to develop a script for the previously unwritten Somali language, which all Somalis speak as their mother tongue. The script, based on the Latin alphabet, was introduced in 1972.

During 1972 and 1973 a series of urban literacy campaigns ensured that most people in the towns, all school children and all government employees, could read and write in their own language. Then, in August 1974, the schools were closed down for eight months and all pupils over the age of 12, as well as all university students—a total force of 25,000—were sent out into the rural areas to give instruction in the script to Somalia's millions of peasants and nomads. At the close of this campaign there were a million and a half more literates in the country.

Also, returning pupils were faced with a completely new curriculum. During the eight months the pupils had been away, a group of 400 teachers, gathered in Mogadishu, overhauled the curriculum; English and Italian were replaced as the media of instruction by Somali and new textbooks—at least one for each subject in every grade—were written.

Since 1975 the opportunity to go to school has been offered to an increasingly large number of young Somalis. The total school population has now soared to 350,000 and, it is hoped that, by 1982 all Somali children will be able to go to school.

The philosophy of education that Somalia now holds is not primarily an academic one. Since economic resources are limited, the overall strategy has been to involve local communities in their own self-education. This is particularly so in the rural development campaign, where communities have elected their own teachers to courses of training. These teachers then return to their people and engage them in a continuing process of learning. Similarly, in the schools, the regular teaching force is supplemented by local craftsmen, farmers and midwives, who give instruction in their skills as part of the syllabus.

At first sight it may seem contradictory that within this flowering of basic education there has been room for a dramatic expansion of higher education.

However, in 1970, largely at the instigation of the Somali president, the National University was made a full-fledged higher institution empowered to grant degrees. At the same time, a long-term agreement was signed with Italy to finance the growth of the university and to provide the necessary academic staff to make this growth possible.

President Siyad saw no contradiction between developing a system of basic, largely non-formal, education in Somalis and, at the same time, using his considerable influence to ensure the growth of higher learning. If the economy was to expand there would be a need for graduates. Better, then, that these graduates should get their degrees in Somalia rather than overseas.

"Our scientific socialism", he stressed, speaking recently at a graduation ceremony of the university, "teaches that one learns for the sake of his country so that when one gets educated he educates his brothers as well. Therefore, please remember that the awards you are to receive here this afternoon do not belong to you alone. You were learning for the sake of the Somali people and they are waiting for you to educate them."

All the faculties that have grown up at the university since 1970 are in areas that can provide a service to Somalia. The original departments of law and economics have remained at pre-1970 levels and still feed the ranks of government administration, but they have been supplemented by a college of education designed to train teachers for the country's technically-biased secondary education system.

Also, the university—on a new campus built with EEC funds—now houses faculties of agriculture, engineering, chemistry, geology, medicine, and veterinary science. Its total intake is 900 new students a year.

The tie-ups with the economy are obvious. Agriculture, for example, previously underdeveloped, is at present one of Somalia's main investment sectors with an overall target of self-sufficiency in staple foodstuffs by 1980.

Similarly, modernization of the livestock industry accounting for 80 per cent of export earnings, requires graduates trained in veterinary science and the prospect of huge mineral wealth in the north and western regions of the country calls for graduates capable of carrying out thorough geological surveys.

One anomaly within this pragmatic university is the Academy of Culture, which exists to research into Somali culture and to write down and publish the traditional oral poetry of the nomads before it is entirely forgotten.

Shirah Jama, director of the academy, explains: "No country lives in its present without some idea of a future. But equally there is no solid present nor future without a sense of the past. Things are inter-related, and changes can't occur in a cultural vacuum.

"So what we hope for in the publication of our oral classics is just to relate future to present and present to past. This, we believe, in human, cultural terms, eases the process of historical passage for a ..."

Engineering instructor of the National University.

Brazil

Dissent fears kill 'inconvenient' conference

by Patrick Knight

The annual conference of the Brazilian Association for the Advancement of Science, due to be held recently in Fortaleza, had to be cancelled following Government fears that the meeting of about 5,000 academics would attract dissident students.

There have been numerous demonstrations, strikes and detentions of students in the last few weeks and the Government was fearful that protests might spread. Funds for the meeting were suspended by the Ministry of Education and a grant of £20,000, for last year, was channelled instead to aid flood victims in Recife.

It was also made clear that public employees would not be given permission to attend this year, which would have effectively prevented the majority from attending. Similarly essential construction work at the University of Ceará, in Fortaleza, had been slowed to a snail's pace and the conference venue would not have been ready in time.

This is the first time in its history that the association has been prevented from holding its conference. More than 2,500 papers were to have been presented and amongst 12 overseas academics to have been present were Professor Eric Hobsbawm and Dr David Haig from Britain. The association is now faced with a debt of £40,000 spent in preparations.

The Minister of Education, Ney Braga, told association officials that it would be very inconvenient if the conference were held and suggested that it should be postponed until later in the year.

At last year's meeting in Brasilia, strong criticisms of many government policies were made and the conference is the only forum where academics, who have been summarily dismissed for ideological and other reasons under the Special Powers Act, are able to present their work. The association has more than 12,000 members.

Australia

Year 2000 inquiry gets big response

from William Purvis

SYDNEY

Three months after the official closing date lengthy submissions are still pouring in to the office of Professor Bruce Williams, chairman of the Federal Government inquiry into education and training to the year 2000.

The 10 committee members face a massive task studying and evaluating the 500 submissions received so far but Professor Williams, Vice-Chancellor of Sydney University, still intends to stick to the mid-1978 deadline for the committee's final report.

The inquiry has been called the most important evaluation ever undertaken of Australian post-secondary education and training and among the submissions received so far are those from nearly every post-secondary institution in the country except Sydney University.

Professor Williams described the response as "enormous". Other submissions include those from individual faculties and departments, the Federation of Australian University Staff Associations, government agencies and education departments in every state, teachers' institutes, trade unions including the ACTU—Australia's TUC—and about 50 private citizens.

Few clear trends have emerged so far and there seems to be no clear consensus on the question of whether Australia has enough post-secondary education and training institutions to cater for students up to the end of the century.

A recurring problem mentioned, however, is the overlap between courses offered by universities, colleges of advanced education and technical colleges. Professor Williams questions what is meant by overlap. What might be undesirable duplication in a city or a particular state might not be in a small regional centre.

The terms of reference of the inquiry give a wide scope for submissions. The committee is charged with investigating the relevance of education and training to the labour market in the next 23 years and, when announcing appointments to the committee last year, the Federal Minister for Education, Senator John Carrick, said the investigation would be the most important inquiry into Australian post-secondary education since the Martin Committee was set up in 1964.

Senator Carrick said the committee would also look at aspects of secondary education, the links between the education system and the labour market and the options available for further education for those leaving school early.

The full committee meets at least once a month to discuss some of the important recent submissions, usually with one or more of the interested parties in attendance. So far the committee has met in every state except Western Australia.

In addition, Professor Williams confers with individual members of the committee when he visits their home states and the committee also organizes special weekend seminars on various topics. The first, held recently in Canberra, dealt with work and leisure in the year 2000 and unemployment.

"This was a very successful seminar", said Professor Williams. "We started with two girls from high schools in Canberra giving us their ideas of what life would be like at the turn of the century, then a university student put forward his ideas. After the seminar proper there was another discussion group on the special problems affecting women.

"We want to encourage more seminars of this kind to give us a lot more of the material that you don't get in the formal submissions."

To supplement the views in the submissions, the committee has done its own background studies on related topics including demographic projections and pass-fail rates for tertiary level students. A questionnaire is being prepared to go out to a selection of staff and students in several centres to assess their attitudes on key issues.

Holland

Fee rules to fix pay ceiling for medical professors

from Lynn George

AMSTERDAM

A government ruling, which becomes effective next year, will restrict the current practice of full-time university medical specialists attached to, or employed by, university hospitals being able to run their own private practices.

In future, all fees for handling private patients in university hospitals, will flow directly into hospital funds.

The controversial ruling, by Dr Ger Klein, Secretary for Higher Education, is an attempt to put a ceiling on the maximum earnings of Holland's 1,400 university medical specialists; probably the most highly privileged group of employees in the country.

University medical professors and lecturers not only enjoy the academic freedom and status which their position affords, but have also taken it as an unimpeachable "right" to augment their already ample university salaries by setting up their own private practices during the universities' time. In a country without a national health service, there is no shortage of customers.

The salary of a full-time medical professor at present tops 115,000 guilders a year (about £23,000) plus holiday bonuses and a non-contributory pension fund. This is about four times the average Dutch industrial wage.

He can easily double this by handling private patients as a sideline. A successful surgeon working privately one day a week in his hospital, can earn between 1,500 and 2,500 guilders and increase his university salary by 25 per cent.

Nevertheless, to compensate for future loss of earnings, allowances above the medical specialist's normal income will be introduced. For the 1,200 university medical professors, assistant professors and lecturers employed by the universities, who have more than four years service, this allowance will amount to 25 per cent of the maximum university salary for each staff category. Present maximum monthly salaries are: 9,642 guilders for professors; 7,790 guilders for assistant professors; and 6,504 guilders for lecturers. Those with less than four years' experience will receive a proportionate amount.

Also, specialists will be divided into three other categories—light, medium and heavy—for the purpose of additional allowances based on the nature and scarcity of the specialism. Those in the heavy category would receive three times as much as those in the medium category, who would, in turn, get twice as much as those in the light category. Just who would be eligible for what is a controversial issue which has still to be worked out.

The allowances, estimated to cost 41m guilders a year, will be at no extra cost to the State as patients' fees from the university-run polyclinics and nursing tariff will be used to finance the scheme.

Although private practice among medical specialists is a widely assumed custom, gauging its extent with any accuracy is a difficult business. A recent survey, conducted by a trade union which represents 80 per cent of medical practitioners, only had a 33 per cent response; of which 86 per cent of university specialists denied having a private practice.

In theory, medical specialists are obliged to obtain written permission from university boards before establishing their own private practice. However, in most cases this is implicitly given by the hospitals themselves which have no wish to stand in the way of attracting top-flight specialists.

In return for the use of hospital facilities, specialists practising privately have a gentleman's agreement with the hospitals to plough some of their earnings into making small improvements to the hospitals such as paying for guest lecturers or acquiring a new piece of equipment.

TIMES PAST THE TIMES

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British Council on trial

For months the British Council has been living on the edge of its nerves awaiting the report of the Central Policy Review Staff (Sir Kenneth Berrill's "think tank") on all aspects of the nation's representation overseas. A fairly traditional and perhaps a little muddled organization, the council suspected that it would not come too well out of this searching inquiry by eager investigators devoted to the rigours of programme and budget analysis.

Its fears were entirely justified. The report is critical of the British Council's performance and dismissive of its contribution to educational and cultural diplomacy. It stops just a hair's breadth short of advocating the council's summary abolition: instead Sir Kenneth and his colleagues content themselves with saying that "there is much to be said" for its abolition while grudgingly agreeing to include in their report a second option which would retain the British Council.

The think tank team seems to be saying two things about the British Council: first, that they are not overimpressed by the clarity of the council's objectives nor the efficiency with which it pursues them; and second, that many of these objectives are no longer worth pursuing anyway. It may be true that the council is a somewhat traditional body, or even a not especially efficient one. If so the cure surely is to bring it up to date and to make it more efficient rather than abolish it root and branch and hand its residual functions over to the DES, the Arts Council, and the Overseas Development Ministry, which might be no more efficient or clear-minded.

Nor is it easy to accept the think tank's severely reductionist view of British representation overseas in cultural and educational matters. We may have hit hard times by our own standards but by those of most of the world we remain a nation of great economic and cultural significance. This is reflected in the strong demand for the services offered by the British Council. Of course the council cannot have a monopoly of this educational and cultural interchange, but there remains a place for agencies such as the council alongside direct contacts between individuals and institutions and the contribution of supranational bodies such as the EEC or Unesco. The think tank was right to subject the British Council to something searching but it was quite wrong to recommend its abolition. The suggested penalty is quite out of proportion to the imagined crime.

Security in the short-term

How much security should educational institutions offer their employees? The tightening of economic purse strings in recent years, and the consequent reductions in public spending have increasingly forced this issue into the open. In doing so, they have highlighted the tensions that inevitably exist between the demands of social planning on the one hand, and the needs of the individuals.

Two recent decisions have taken the issue a step further. The decision by the Employment Appeals Tribunal on the status of short-term contracts represents yet one more round in the continuing struggle between universities and the Association of University Teachers on the rights of employees. And the decision that college of education lecturers are ineligible for redundancy money if they reject the offer of work of a comparable level in a school is unlikely to be met with enthusiasm.

The Appeals Tribunal's decision is essentially a legal one. Two years ago, a court of appeal decided that if a short-term contract contained provision for it to be terminated with due notice by either side, then it was no longer technically "fixed term", for the purpose of allowing people to contract out of their rights to claim for unfair dismissal or redundancy payments, and an employer could be accused of unfair dismissal when it expired.

As a result, a number of employers have since claimed that as such contracts are not "fixed term", they merely run out after a particular length of time, and the employee could not legally consider himself or herself to have been dismissed. The Appeal Tribunal has now ruled that this is not the case, allowing once again the opportunity for an employee holding such a contract to pursue an unfair dismissal or redundancy payment.

The nuance is slight. But in a situation where the loss of a job can mean sentence to a long period on the dole, it is important that every case of "redundancy" is argued on its merits, rather than on technicalities. The Appeal Tribunals' ruling is therefore to be welcomed as a step in this direction.

It is ironic, however, that while university staff are fighting the right of others to refuse them work, their colleagues in the colleges of education are fighting for the right to refuse work. There is no neat solution to either; any society needs flexibility to manoeuvre, flexibility implies the ability to change direction, and conflicts with the aspirations of individuals are bound to emerge. In any such situation, however, it is important to ensure that moral justice does not suffer at the hands of administrative convenience. And this can only be guaranteed if justice remains seen to be done—as the Appeals Tribunal's decision will, one hopes, allow.

Politics first in Wales

The decision of the Government that teacher training should cease at the Polytechnic of Wales looks very odd in the light of the Green Paper, *Education in Schools*. The Green Paper emphasizes the need to raise the standards for entry to teaching. It also says that teachers should study alongside those training for other careers and that there should be closer links between education and industry.

The Polytechnic of Wales scores highly in all these respects. In September it attracted the largest number of students with two A levels—the new entrance requirement to teacher education recommended in the Green Paper—of any college in Wales. The achievements of its students at the end of their course also compare favourably with some other colleges in Wales.

The closure of the polytechnic's education department looks even more surprising when it is considered in conjunction with the reprieve for the West Glamorgan Institute is probably right to claim that its large role in in-service training has played a part in its salvation. This has been one of the factors uppermost in the Government's mind during the reorganization. But it is strange that ministers should have chosen to keep yet another college of higher education, giving Wales a much higher proportion of this type of institution than in England.

Local politics and the anxiety of the Government not to upset local authorities which have been fighting fiercely to keep their colleges have assumed far greater importance in Wales than in England. It was a more popular decision to rescue the West Glamorgan Institute, which would have faced closure, than it was to save teacher training at the polytechnic which has been highly successful in mounting diversified courses. The result is that the overall plan for teacher education which has been applied at least in a rough and ready manner in Wales. The end of teacher training at the polytechnic may be good political sense but it has nothing to do with education.

LETTERS TO THE EDITOR

Cardiff appointments

Sir, — Your headline "Cardiff principal vindicated" (*THES*, July 22) may have been a little over-optimistic. The enquiry conducted by Mr H. E. Francis, QC, into recent affairs at University College, Cardiff, establishes that the principal did indeed do all the things complained about but concludes that there was nothing wrong with them. So it seems that it is not so much the facts that are in dispute as the moral evaluation of them.

To take just the case of Professor John Beetlestone and the chair of science education, Mr Francis finds it "proper" to invite an overseas candidate for a chair to suggest names for the external members of the appointment committee in order that he "could be fairly assessed alongside the British field"; it "does not shock [him] in the least" that attempts were considered to arrange for Professor Beetlestone to be paid two salaries while on sabbatical leave from the date during the first year of his appointment in Cardiff; and he makes no comment on the fact that the principal gave to one of the external members of the committee what Mr Francis himself thinks to be a misleading impression of the "primary function" of their task.

More generally, Mr Francis seems throughout to have accepted that the principal should be the master and not the servant of his institution, and that provided only that the principal acts in the best interests of the college as he sees them, complaints of insufficient consultation and of breaches of statutes and procedural rules of the council, senate and their committees, need not be taken seriously.

We believe that very many people who are concerned for the good name of higher education will find the situation in Cardiff revealed by Mr Francis to be quite incompatible with the standards expected in public life generally and universities in particular. As your readers may wish to make up their own minds, they are invited to write to the first signatory of this letter, who will be glad to send them a copy of the report so that they may judge the situation in Cardiff for themselves.

Yours faithfully,
Andrew Belsey, N. R. E. Fisher, Robin Auffret, Anthony Maghan, Catherine Belsey, R. A. Stradling, John T. S. Madeley, Rosemary Jofferson, Richard Jones, David Reynolds, David Graham, M. W. Collier, T. D. Crawford, P. W. H. Pennell, Chris Mottam, H. Blake, J. Price, R. Williams, Shelagh C. Pollard, K. Thompson, G. Monghnan, W. M. Walker, Paul Wilding, Sara Delamont, Jan Adam, John Truman, P. Rancie, B. Ll. James, M. Breaks, R. J. H. Johnson, K. W. Wilson, Gwilym ap Robert, Paul Atkinson, Barry Wilkins, David Bates, A. M. Johnson, D. M. Hilyer,
University College,
Cardiff.

Sir,—Your report headed "Cardiff principal vindicated" (*THES*, July 22) reveals that an applicant for a chair "was invited by the principal to choose two members of his own selection committee". These members were the two external assessors, who, coming from outside the university where an appointment is to be made, are normally expected to be totally unbiased in judging between candidates, as well as qualified, by virtue of being experts in the field of the chair, to ensure the maintenance of standards comparable with those of other universities.

As non-professorial academic staff elsewhere in Britain, we may, on some future occasion, have a personal interest in vacant chairs at Cardiff. If, however, it is the accepted practice there that one candidate may be invited to name the external assessors on a selection committee, we shall think very seriously indeed before applying for posts in that institution, and have no doubt that many of our colleagues will be similarly deterred.

This is not merely a matter of parochial concern; it raises serious issues of public confidence in a university system which has always taken pride in its tradition of self-government.

Yours sincerely,
P. W. HIGGS,
Reader in physics,
Edinburgh University;
M. R. HOARE,
Reader in theoretical physics,
Bedford College, London;
C. A. LUTTRELL,
Senior lecturer,
English department,
Leicester University;
MARGARET MAJUMDAR,
French department,
D. R. McLINTOCK,
Reader in German,
Royal Holloway College, London;
A. RODWAY,
Reader in English literature,
Nottingham University;
VIVIAN SALMON,
Reader in English language,
Edinburgh University.

Cultural studies and Marxism

Sir,—If Mr Watson's renewed attack on this centre (*THES*, July 29) is to be at all useful to anyone, we ought to ask him to address some of his own presuppositions: to be, in short, less dogmatic.

One important area of such presuppositions—the ground on which, in fact, Mr Watson chooses to fight—is the intellectual character and current state of European Marxisms. I do not know what his conception of "Marxism" is: his letters convey a demonology established through apparently unpleasant associations: "polemic", "ideological theorizing", "theoretical claims (or dogmatists)". He does not specify "the particular Marxist heresy peculiar to the centre" or spell out the nature of our "narrow dogmatism".

Instead, phrases like these trivialize or suppress almost every important intellectual question. These questions are not only of concern to "Marxists", but are traditions which are over hermetically sealed. Thus "theorizing", employed as a word of abuse, renders trivial a key problem in the human sciences: at what level or levels of abstraction is it most useful to work? The polemical use of "ideological" likewise devalues a concept of some analytical and explanatory power.

On these questions and many more, Marxists offer a very large range of answers, often only sparsely indeed before applying for posts in that institution, and have no doubt that many of our colleagues will be similarly deterred.

This is not merely a matter of parochial concern; it raises serious issues of public confidence in a university system which has always taken pride in its tradition of self-government.

Yours sincerely,
P. W. HIGGS,
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Royal Holloway College, London;
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Reader in English literature,
Nottingham University;
VIVIAN SALMON,
Reader in English language,
Edinburgh University.

Tuition fees

Sir,—The figures given by Mr Oakes in a written answer to the House of Commons on July 18 on the average costs of tuition per student in different institutions, which you quote (*THES*, July 29), are taken from Volume *Five of Statistics of Education* published by the Department of Education and Science and relate to the year 1975-76.

Before these figures are taken seriously it is necessary to know how they were calculated. The following explanation is given: "The figures shown in the table are the institutional costs, that is the cost of providing tuition. They are the simple averages of expenditure divided by the number of pupils in each institution and/or level of study" (my italics).

It is clear that this means that in the case of universities the total expenditure has been divided by the total number of students. Thus an account has been taken of the considerable proportion of the resources of universities which is devoted to research activities.

I know that it is not easy to estimate what this proportion is with any precision, but until some attempt to do so has been made the figures given for the average cost of university tuition should be regarded as entirely spurious. It is a shame that your headline ("University tuition costs £2,225 per student") encourages the false belief that in the case of universities the total expenditure pays only for "providing tuition".

Yours faithfully,
A. B. SLOMSON,
School of mathematics,
Leeds University.

Image or salary?

Sir,—I despair. Mr Tiley's fleecid letter (*THES*, July 29) shows that the Association of University Teachers has learned nothing since 1975. It is still more concerned with the rectitude of its public image than with the size of its members' salaries. It still thinks that it can engage in genteel and gentlemanly negotiations and rely upon the Government to do the right thing "solely for the sake of integrity and good faith". There must have been many happy faces in Whitehall when Mr Tiley's letter was published.

The ease with which Mr Tiley throws bargaining counters out of the window demonstrates to me that he is badly in need of some education in the realities of negotiation: I suggest he apply to the hospital consultants for tuition. Meantime, with the AUT acting for me I need no government to keep my pay down.

Yours faithfully,
J. P. STEVENSON,
Brayton Avenue,
Didsbury,
Manchester.

Letters for publication should arrive by Tuesday morning at the latest. They should be as short as possible, and the editor reserves the right to cut or amend them if necessary.

more letters on page 17

Don Cupitt discusses the growing chasm between conservative and liberal versions of Christianity

Has failure of nerve caused this new divide?

On both sides of the Atlantic, among Catholics and Protestants, ultra-conservative forms of belief are flourishing and receiving, on the whole, a friendly press. Fundamentalist Protestantism is more vigorous than ever in the USA, and creationist, anti-Darwinian scientists are not uncommon there.

In the Church of England, the Evangelical party is by far the largest and most cohesive single group, and is bidding for leadership. In the long run, perhaps the most important feature of the recent *Gay News* trial will turn out to be the fact that the proceedings were conducted upon the assumptions of the Evangelicals who brought the prosecution.

Most journalists seem to feel that ultra-conservative Christianity is the genuine religion. The strict system of religious censorship which the Salvation Army operates did not dissuade even Richard Ingrams from expressing recently his admiration for Salvationist religion. The authorities in Rome have been trying to wean the French Church away from *Action Française* values for nearly a century, but in spite of the alarming political opinions of many of his sympathizers, Archbishop Lefebvre still receives respectful coverage.

The religious right's lack of intellectual foundations seems to do it little harm. Classical Christianity, of the type that existed until the Enlightenment, was supported by a wide range of arguments from various kinds of rationalism to more or less self-conscious empiricism. It has even invented some (bad) epistemologies of its own. Much the same is true about those orthodoxies on the nature of social formations which once provided plausible ground for the routine attacks on "economic determinism".

This century's work contains one of this universe of discourse called Marxism. The easy reply to Mr Watson's attack would be to point to the non-Marxist elements in my work: to the fact, for instance, that our Historians read histories in the French *Annales* tradition as well as the British Marxists. But it is actually more important not to be cowed, nor to disavow a "Marxism", and to argue for the legitimacy of a context which takes Marxisms seriously and does encourage critical and undogmatic work within these traditions.

If Mr Watson wants us to use other than Marxist texts, we already do that. If he means that we should dispense the nature of our intellectual tendencies or be obliged to change them by a touch of inquisition and reorganization, it must be said that this cannot be done. For it would involve real intellectual dishonesties.

To take one last example: our historians did not choose last year to study the work of Maurice Dobb, Rodney Hilton, Eric Hobsbawm, Christopher Hill and Edward Thompson just because they were "Marxist historians": these work were chosen because they raised unusually for English historians questions about the relation of form and content which are central to our own work (and, we would add, for any intellectual project).

It is also worth asking—but would need a much longer discussion—whether the methods and the value of these works are to do with how they do not have something to do with their author's avowed Marxism. And behind that argument there would lie another: whether Marxism sustains its promise, to be developed by critical work, of a "science" of the history of social formations.

By all means let us have these arguments. And if Mr Watson (or others) are puzzled by our results or vexed at its existence, why don't they come and see us and talk. No debate worth having can be conducted in the manner inaugurated by Mr Watson and currently promoted, unfortunately, by the editor of *The Times Higher Education Supplement*.

Yours sincerely,
RICHARD JOHNSON,
Centre for Contemporary Cultural Studies,
University of Birmingham.

Classical Christianity. It has been forced to become much more authoritarian.

Passing over the fact that he did actually alter the documents of Vatican II, Lefebvre now declares that the Church has been straying from the right path for generations. A fervent papalist, he is obliged to appeal from the Pope he has to the Pope who would exist if the recent development of the Church had been more to his liking. His sole remaining touchstone of truth is thus imaginary.

Conservative Protestantism has at least something tangible to point to, namely the Bible. But as with all dogmatic belief-systems, it runs into the paradox of the criterion of truth: that it cannot in itself be proved, but only asserted in circular arguments.

Thus, we have it upon authority that God is good; a good God will not leave us floundering without that highly desirable thing, an objective norm of revealed truth; there is something that claims to be the revelation we need; therefore it is revelation, and it tells us that God is good, which was our first premiss. Again, we know (for scripture tells us) that Jesus Christ is the truth; and he testifies to the authority of scripture; so scripture is true, because he is; and he is, because scripture is.

Circular arguments of this kind were produced at the time of the Reformation by Catholics, defending the infallibility of the Church against historical criticism, and William Chillingworth in his *Religion of Protestants* (1638) easily demonstrated their invalidity. Today the tide of philosophical, historical and biblical criticism has eroded the foundations of Protestant as well as of Catholic orthodoxy. What is taken to be orthodox belief can only be defended by ever more authoritarian (and therefore circular) arguments.

Archbishop Lefebvre: leading Catholics towards schism

But in that case it is no longer orthodox belief, for faith comes to be identified with loyalty and determination in the defence of an island citadel of dogmatism. It degenerates into simple bigotry, and dogmas which once illuminated all of human experience are reduced to the status of passwords. Ultra-conservative faith is not a reversal of the decline of religion, but rather its saddest symptom, for by its authoritarianism it empties its own beliefs of content.

Yet in spite of all this, conservative religion is still believed to be the genuine article, and those who can readily see a scholarly liberal rabbi as the finest exponent of traditional Jewish values profess to find liberal or critical Christianity incomprehensible and ridiculous. Since *Essays and Reviews* (1860) a whole series of books, some symposia and other works by individuals have been greeted with same furore of astonished public indignation as has surrounded *The Myth of God Incarnate*.

Most of the issues with which this new book is struggling are centuries old. The oldest and most vital, that of the schism between the Church and the Synagogue, goes back to St. Paul. It is discouraging that, just as Reform Jews over a century ago were accused by their orthodox brethren of skirting dangerously close to Christianity, so now Christian liberals should be criticized for moving closer to Judaism. Those who seek to heal the oldest wound of all should not be regarded as frivolous.

And the other issues are not exactly new. Those who first framed the slogans of the Trinity and the Incarnation knew well enough that the new doctrines were not entirely scriptural. The orthodox reformers, who declared *both* the sufficiency of scripture *and* the necessity of the slogans, were bound in the end to revive old controversies by building the contradiction into Protestantism.

The question of absoluteness of Christianity in relation to other faiths has been prominent on the theologians' agenda since the seventeenth century, and the relation of doctrine to critical history since the eighteenth. Typically nineteenth century concerns are the distinction between the Jesus of history and the Christ of faith, the limits of our historical knowledge of Jesus, and the role of myth.

There is at least a strong case for saying that ultraconservative Christianity is a modern heresy, and the result of a failure of nerve. The best known movements in it are of surprisingly recent origin. British student Evangelicalism began in the 1880s, and Fundamentalism after the First World War.

By contrast, the liberal or critical theologians are the continuators of the mainstream of Christianity's intellectual tradition, and still maintain concern for the historic issues. And, I say definitely, it is upon them that the future development of Christianity depends.

It is not at all clear which way the argument will go. Some seek a global, multifaith theology of religions, some a rapprochement with Judaism, some a fully-critical Christian theology purged of all elements of dogmatism, and some a modernist theology of religious experience; and there are doubtless other possibilities and combinations of possibilities and routes.

But that the debate is important is, I think, undeniable. Meanwhile, Church leaders have an unenviable task. Perhaps instead of trying to gloss over the differences they should try to involve the ordinary believer in the debate?

Too often they deplore and fear controversy as a threat to the unity of the Church, whereas in fact in the liveliest phases of its history Christianity was not in a condition of slumbering consent to timeless truth. On the contrary, it was what it is today, a many-sided fast-moving controversy.

The author is dean of Emmanuel College, Cambridge and university lecturer in divinity.

We must bridge theory and practice in study of the arts

The universities have traditionally been in two minds about the arts. They have a long-standing suspicion of executant or practice-based activities, usually on the grounds—which are more often assumed than argued—that such activities cannot have adequate academic bases.

The field of liberal adult and further education used to express this division formally. A university adult tutor could run a class in musical appreciation or in literature through his extra-mural department, under the then adult education regulations. To mount a class in the practice of music or to stage a play one had to look outside and beyond the university to the further education regulations which applied to L.E.A. and such-like classes. I believe this distinction is now being abolished or at least modified; within "educational" contexts we are almost all happier at being asked to *respond* to the arts rather than in exposing ourselves to *making* them.

Drama as a mixed academic discipline and practice is now fairly well-established in universities and colleges; it came in over the last decades chiefly through the back door of English literature courses and was felt to give it academic respectability (much as in many places English literature itself had to be linked with the learning of Anglo-Saxon until after the Second World War).

My impression is that the practice of the visual arts has been most subject, perhaps because they seem most difficult to attach in a recognizable base, seem more anarchic" than drama or literature. Universities may sometimes have a department of the history of art, but be firm against organic study of art in a school. At present there are stronger in art history than in practice.

These, at least, were the traditional attitudes towards artistic activities: the expansionist sixties saw much change—as in higher education generally. Some of the new and some of the slightly older universities acquired their own theatres, for example, often with a professional core-company.

So those against the Arts Council's regional theatre network of the past 30 or so years, and the country is seen to be well provided with building-based drama, I do not think we need worry much about that kind of capital outlay for a while.

But my impression is that not as much has been done for the other arts—with the inevitable exceptions, such as the Lyons Concert Hall at the University of York, or the University of Southampton's interest in a permanent photographic gallery, or the occasional arrangements for writers or artists in residence.

The most important fact about the appreciation of the arts in Britain today concerns much more than the institutions of higher education. It also poses the most important dilemma before the Arts Council, after 20 years of enormous growth in its funds; and the council's own researches into audiences vividly illustrate the problem.

Most of the new money is going towards subsidizing and improving the artistic pursuits of those who already know and enjoy the arts. To them that hath shall be given. There is some degree of spreading downwards from socio-economic groups A and B, with students as the main new entrants; but it is little and slow.

Need for rethinking

In general, it is as though the pyramid of the arts was creeping down the social pyramid from the top 4 per cent or so, but at a rate which will require decades to make a substantial difference. Clearly the model of "broadening down from precedent to precedent" is wrong. There needs to be radical rethinking, especially about approaches from the other end, as it were.

Yet among the main beneficiaries of the "slow spread downwards" approach have been precisely students in higher education, who are by definition much more likely to take advantage of the subsidized seats at admission charges (and probably receive further remissions on production of a union card).

The universities and their students have both gained lavishly from the increased public commitment to the arts of the past two decades. They have given little in return in the way of thinking about how the majority outside the pale might share their riches.

The primary need for society at large is, without forgoing standards, to broaden "access and participation" (in Unesco's favourite phrase). In this operation the Arts Council, the Department of Education and Science, voluntary bodies such as the Gulbenkian Foundation, and the institutions of higher education should cooperate. I suggest between practice and academic study which I described at the start of this article.

Cultural studies

Inter-disciplinary work is always harder than we assume before we start on it; and this particular sort calls for inter-disciplinary thinking of an unusual kind. One does not make an art a respectable claimant to a university degree course by tagging large booklists on to the existing syllabus, or including seminars on [illegible] or drama.

A few months ago I attended a one-day conference at the Royal College of Art convened to discuss what are now being called "cultural studies" in the colleges of art. The concern and the range of different approaches were remarkable, and could not be paralleled by similar activity by the universities.

It can be argued, of course, that perhaps the colleges of art have done better in this work precisely because they were not regarded as academically respectable and so were left alone; that functional links with universities or polytechnics might be the kiss of death.

If the universities were to take more seriously the need to bridge practice and theory in the study of the arts they would gain; there is too much of a restrictive academicism about many university studies in the arts today. And I think artists might gain too.

enthusiastic in practising art before puberty (and the Plowden Report noted how effective many primary schools are in this area), but that thereafter they become self-conscious, unwilling or even hostile. Presumably the causes of the change lie partly in personality, partly within the cultures' attitudes towards different age-groups and to the arts generally. We know too that some secondary schools—which meet the problems of puberty directly—are experimenting with varying degrees of success. But very much more is needed.

Thirdly, there is the need to link practice and theory. Internally, for the universities, a crucial need is to reduce or remove that gap between practice and academic study which I described at the start of this article.

Cultural studies

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If the universities were to take more seriously the need to bridge practice and theory in the study of the arts they would gain; there is too much of a restrictive academicism about many university studies in the arts today. And I think artists might gain too.

I am not greatly persuaded by the view that building artists are easily maimed by building made intellectually self-conscious. In my experience, most talented people have their own, built-in prophylaxis against that risk. In general, greater self-awareness seems useful for any of us; it is a considerable stay against self-delusion.

It is certainly worth experimenting for more than has been done so far; for instance, jointly run and jointly validated courses between universities and their local schools of art would begin to show the measure of the problems and possibilities.

Finally, there is the problem of oversupply or over-expectation. No doubt too many are being trained—in acting, art and music—than can be absorbed as full-time professional executants; and no doubt we should look hard at the case for reducing supply.

But it is also, more importantly, a problem of excessive and misguided expectations, of too many being led to assume they full professional creative status is the only justifiable or glamorous end to their studies.

There are other valuable and interesting ends, and will be more if the links between practice and intellectual study which I am asking for are better made. Such courses would provide the people who could fulfil the needs described in the first two points above; people who worked directly within the community and within the schools, to develop practice and appreciation.

More generally and more significantly, people with this kind of training—an sort of contemporary artistic grants—could be valuable in many other areas of society. They could have been given, to use some lovely old-fashioned language, a liberal education for the whole man.

Richard Hoggart

The author is warden of Goldsmiths' College, London. This article is a revised version of a talk given last month at a conference organized by the Gulbenkian Foundation.

BOOKS

Preserving Freud's special status

The Scientific Credibility of Freud's Theories and Therapy
by Seymour Fisher and Roger P. Greenberg
Harvester Press, £12.50
ISBN 0 85527 989 3

Freud and the Dilemmas of Psychology
by Marie Jahoda
Hogarth Press, £5.95 and £2.50
ISBN 0 7012 0425 7 and 0437 0

Both these books in their very different ways attempt to determine what in the complex Freudian heritage is worth preserving. Both attempt to base their conclusions on a solution to the problem of validation. The Fisher and Greenberg solution is straightforward and familiar: those theses of Freud should be accepted which survive experimental investigation. They have surveyed the entire experimental literature devoted to testing Freud's theoretical and therapeutic claims. The bad news first: Freud did not understand women, dreams, or how psychotherapy works.

The good news is considerably more abundant: among the topics on which Freud held views that were both strikingly distinctive and "basically sound" are the aetiology of homosexuality, the Oedipal and castration factors in male personality development, the value of the concepts of orality and anality in understanding important aspects of behaviour.

However, these conclusions do not always seem to arise naturally from the survey of the relevant research which is supposed to support them. The authors exercise a worrying degree of discretion in deciding that the trend of the experiments is in Freud's favour. One of their most interesting conclusions is that "personality develops around problems of satisfying and inhibiting body needs as they are personally experienced in specific body areas that have social connotations". On the strength of this they deplore "a trend for contemporary psychoanalytic theorists to draw away from Freud's body-oriented formulations and to turn to cultural concepts of a less earthy sort". More specifically, they hold "It is a convincing fact that so many studies demonstrate significant correlations between attitudes towards activities linked to organs such as the mouth and anus and certain logically related forms of activities."

But they do not, in fact, present many studies which demonstrate this; so what makes them think they have? One of the reasons for their failure to see the extent of the gap between the evidence they have assembled and the conclusions they derive from it is that they have adopted the ill-advised practice of using the same term in both its natural, literal and its Freudian-theoretical sense. When they speak of oral characters or an oral orientation this sometimes refers to the subject's relation to his mouth, but at others merely his tendency to passivity; similarly with anality, it sometimes means orderliness or obstinacy, or parsimony, and sometimes preoccupation with the anus and its functions.

When they speak of investigating the anality of persons pursuing different occupations they sometimes only mean investigating the propensity to orderliness of such persons. We are given an account of an investigation into the differences between students of accounting and students of creative writing. Their "anality" was determined by "the degree to which the individual accepts social norms, tries to be emotionally controlled, maintains compulsive defences, restrains hostile impulses, avoids ambiguity, etc, etc." What has any of this to do with shitting? Yet they count this study as favouring the conclusion that those who prefer an occupation which calls for careful, systematic and orderly procedures are "anal in their orientation."

(By contrast the investigation carried out by Silverman *et al.* is not open to the objection of tendentious redefinition. When these authors speak of "a verbal stimulus with Oedipal incestuous meanings" they mean just what they say. They studied the difference between the responses of homosexuals and non-homosexuals to the phrase "Fuck Mommy". I think it would be conceded that this is what we would all call "a verbal stimulus with Oedipal incestuous meanings". But this level of semantic appropriateness is not often attained.)

One of the measures which attains it is that employed in an ingenious series of experiments by Rosenwald. Anality was assessed by the decrement in performance produced when a subject had to identify certain geometrical forms with his hands immersed in a smelly faecal-like substance, as compared to his performance when they were immersed in water.

This is how Rosenwald went about investigating the relation between anality and orderliness. He got subjects to fill out two questionnaires, one of which is described as dealing directly with anxieties concerning dirt ("When I have been in a dirty place I feel contaminated"), the other "indirectly" ("I frequently get upset when my routines are interfered with"). Finally, he got subjects to solve a problem which involved identifying geometric shapes with their hands immersed in a faecal-like medium. Unfortunately, this last, the most apparently pertinent of the anality measures, failed to vary with the measure for orderliness—how much time and care were spent in neatly rearranging some magazines that were in disarray—only the "indirect" questionnaire measure did.

In spite of which Fisher and Greenberg write: "One cannot help but be impressed by a study like Rosenwald's, which found that the amount of anxiety expressed by persons about anal matters predicted how carefully they arranged magazines that were in disarray." Why are they impressed? Isn't it because they describe saying "yes" to the question whether one is upset by interference in one's routine as "expressing anxiety about anal matters"?

Had the care with which the magazines were arranged been predictable from the manner in which subjects handled the faecal-like medium, that would have been impressive. This suggests that the authors have been fuddled by their own terminological practices and have forgotten that the word "anal" as they use it need have nothing to do with anuses.

Similar considerations undermine the authors' conclusion that the research they survey "supports the basic soundness of Freud's views as to the role of castration anxiety in male personality development."

Sigmund Freud with his daughter Anna in the Dolomites, 1912.

This is the account of an experiment which they feel shows castration anxiety to be characteristic of homosexuals. A psychologist called Schwartz administered the thematic apperception test to 20 homosexual males and as many heterosexual controls. "An analysis was made of the stories obtained in terms of the number of references to castration themes (for example, loss of body parts, personal inadequacy)." By what right is apprehension over possible mutilation or concern at "personal inadequacy" treated as a manifestation of castration anxiety? In the next paragraph they say of a study which discovered a tendency among homosexuals to manifest a "sense of bodily fragility and fear of getting hurt while growing up" that one can reasonably interpret such findings as "paralleling the dimension of castration anxiety". In another chapter they write: "Just as conjectured by Freud, castration anxiety (fear of bodily harm or attack) is a common occurrence in men."

What these studies really show is that there are psychologists who would sooner part with their own penises than with the concept of castration anxiety. Though the evidence the authors present may be sufficient to warrant continued investigation into Freud's views on the relation of body-orifice attitudes to other aspects of behaviour, it is not strong enough to warrant the shift in the preoccupations of personality theorists from social interactions to body-need vicissitudes for which they call.

Professor Jahoda's purpose is "the presentation of Freud's thought in awareness both of his critics and of the problems of psychology as a science".

The most unsatisfactory feature of Professor Jahoda's book is her treatment of what she calls the "all-important problem of validity". This has several sources, the chief of which is her reluctance to follow any train of thought which might upset the traditional image of Freud as the indefatigable seeker after truth. However, the doubts she must feel, but won't candidly acknowledge, take their revenge and surface from time to time, plunging her into incoherence and self-contradiction.

Professor Jahoda rightly says that the question of validation is central to assigning intellectual status to psychoanalysis. "If the analysand has become very dependent on the psychoanalyst, it is conceivable that the dialogue is one in form only . . . the patient producing under the power of the transference the appropriate associations". "Freud was too sensitive and honest an observer to deny this possibility outright."

In this remark Professor Jahoda creates the misleading impression (no doubt because she is herself misled) that Freud was candid about the danger of using clinically produced material as confirmations for psychodynamic theses. But in the twenty-eighth of the *Introductory Lectures* this is how Freud meets the suggestion that "our influence upon the patient may bring the objective certainty of our discoveries into doubt"—"Any one who has conducted psychoanalyses has been able to convince himself numberless times that it is impossible to suggest things to patients in this way."

Putting this aside, how does Professor Jahoda think Freud indulged what she calls his "passionate desire to discover ways in which the validity of psychoanalytic findings could be established"?

Being well aware of the unique nature of the psychoanalytic situation Freud sought validity for what he had there discovered in other fields which were clearly independent of the relation between an analyst and his patient, in history, philosophy, literature, art, anthropology and religion.

Freud argued implicitly that if what he knew was valid then it must manifest itself somehow in the "objective" social, historical and artistic achievements of mankind.

Just how does Professor Jahoda think that Freud's speculation about the origin of the incest taboo, totemism, the ethnic identity of Moses, the reason why we are moved by the fate of Hamlet or Lear, could have been expected to provide, as she maintains, a means of "choosing between Freudian psychoanalysis and competing systems such as Jung's or Adler's"? She does not say.

Professor Jahoda's thesis is not only implausible, it is also difficult to reconcile with her view that "the question of historical truth is almost beside the point of specifying what these works mean for psychoanalysis". If the importance of "these works" is, as she maintains, that they supply "convergent validity" for the theses of psychoanalysis, how can their historical truth be "almost beside the point"?

She concedes elsewhere that Freud "used his excursions into other fields not to see whether he was right, but to prove that he was" (p160). But she goes on to say, in extenuation of this, that it is standard scientific procedure: "Falsification is always left to others."

Professor Jahoda does not see the obscurantist implications of her remarks because she does not think concretely and specifically enough about the theses they are to apply to. Where the claims being advanced are prophylactic, diagnostic or therapeutic a certain circumspection is called for. Would Professor Jahoda extend her indulgence to psychosurgeons and psychopharmacologists, or is it reserved for culture heroes? Is it "Carry on dosing", then, and "Carry on shocking and cutting" or, as I suspect, only "Carry on interpreting"?

In her account of the controversy over the value of Freud's achievement Professor Jahoda runs together two distinct sorts of objection to placing a high value on this achievement. One is the objection that psychoanalysis is not a science, along with the implication that this being the case it is not a genuinely epistemic discipline of any kind. What is striking about this thesis is that it figures enormously more often in the rebuttals of apologists than it does in the arguments of objectors.

The second, more telling and often ignored objection to psychoanalysis concedes, and even insists on, the epistemically licit character of hermeneutic enterprises, but nevertheless passes an adverse judgment on the procedures and theses that the term psychoanalysis suggests because it sees them as pseudo hermeneutic. Unfortunately, the convention has grown up of expressing this point, too, by saying that psychoanalysis is pseudo scientific. This gives apologists the opportunity of ignoring the supplementary argumentation and of scoring another cheap victory over attempts to sow some doubt as to the genuine enlargement of knowledge that psychoanalysis has effected.

Professor Jahoda refers to my question "Was Freud a Liar?" as "extravagant" and "sensational". It may seem extravagant and sensational to those who have become so accustomed to their own obsequiousness that any attempt to arrive at an independent judgment strikes them as *lèse-majesté*, but it is a natural and even inevitable question for anyone who has made the attempt to reconcile Freud's account of various matters with each other or with what can be learned of them from independent sources.

This is Professor Jahoda's account of the seduction episode: "His first women patients landed him in a traumatic intellectual and public confusion by presenting their fantasies of early seductions as actual memories of events" (p 87). It is precisely this view which moved me to pose my question about Freud's veracity. What Freud said of his patients' attitude to the ostensible seductions at the time was "whilst calling these infantile experiences into consciousness . . . they still try to withhold belief by emphasizing the fact that they had no feeling of recollecting these scenes". I leave it to Professor Jahoda to explain (since she rejects my amnesia theory) how Freud could later represent this state of affairs by describing his patients as "taking up our time with invented stories".

Though Professor Jahoda's book contains much of interest, its main effect is to reinforce the conviction that Freud occupies a specially protected status in our culture and that one of the major problems posed by the history of psychoanalytic ideas is why this should be so.

Frank Cioffi

People describe other people

Personality Description in Ordinary Language
by D. B. Bromley
Wiley, £9.00
ISBN 0 471 99443 X

It is the fate of many of those who work in the educational, counselling and social services to read and to write personality descriptions. The length and content of a description depends on its purpose: for example, to commend a student to a university, or to justify a recommendation about a young offender. Underlying the superficial differences, however, is a common purpose, namely to enable those who read the report to understand the person described. It is therefore pertinent to ask whether there are any common ground rules. Should the report be restricted to interpretation of psychometric data? Should one adopt a particular theoretical stance and so use the terminology of Freud, or Rogers or Eysenck? Or should one just write what comes to mind in plain everyday language?

To these questions, Professor Bromley returns a firm "no". To quote his own words: "the report of a case-study should be written in good plain English in a direct, objective way without, however, losing its human interest as a story. The writer should present the individual's point of view, rather as a barrister presents his case in a court of law" (pp 171, 172). Thus Bromley tries to avoid two extremes: the short-sightedness that results from describing a person in the language of a particular theory, and the confusion that results from undisciplined use of ordinary language. It is the *systematic* study of person-descriptions in ordinary language that yields the categories which in turn supply the necessary structure of the case-study. As language users we are heirs to a rich store of psychological understanding of other persons, and when we unpack the store in a disciplined, scientific fashion, we find the complete descriptive apparatus and some elements of a *general* explanatory theory of personality.

Bromley's experiments yielded 30 categories that are heavily used when people describe one another. They fall into four groups: external characteristics (e g, physical appearance), internal characteristics (e g motivation), interpersonal characteristics (e g social position), and ethical evaluation. The categories were identified by the content analysis of personality descriptions written by 240 subjects aged between 20 and 70. Roughly half the book is devoted to explanation and copious illustration of the syntax-based method of content analysis. The following chapter shows how the 30 content categories provide the structure of the case-study.

Perhaps the greatest merit of this book is its thoroughgoing account of the major ways in which people actually describe others. In principle, this approach to personality description is superior to scanning the dictionary, or doing word-counts of literary specimens. As a whole the book itself is uneven, sometimes lucid and quotable, and at other times forbidding. The final chapter on "Characterization in fiction" does not fit, and could have been omitted.

John Bradshaw

BOOKS

A science of criticism

Contemporary Approaches to English Studies
edited by Hilda Schiff
Heinemann Educational, £3.80 and £1.50
ISBN 0 435 18806 2 and 18807 0

Professor Benjamin Hrushovsky, of the Institute for Poetics and Semiotics at Tel-Aviv University, runs a journal for descriptive poetics and theory of literature" called *PTL*, of which the fourth issue has recently appeared. Discussing the first four issues in the *TLS*, Anthony Thorlby pointed out that the strenuously scientific endeavours of Professor Hrushovsky and his colleagues to achieve a precise objective understanding of the properties of what we call literature represent something very alien to the British tradition of literary criticism and that conversely, from Professor Hrushovsky's point of view, literary study in this country is "prescientific".

The British critical tradition looks on criticism as an art rather than a science, and its characteristic method is a special kind of what can be called *loaded description* of a literary text conducted in such a way as to draw the reader's attention to its patterns of meaning, its echoes and reverberations, its structural harmony, its phonetic and rhythmic effects, and to show how all these elements cooperate to produce in the experienced reader a sense of illumination and deepened awareness of some aspects of experience. There are special occasions when it is thought necessary to show how a particular work or body of work arises from the psychology of the writer or the society in which he lived, or from the interrelation between these two, but such investigation is most often held to be of more biographical and historical than critical significance. In general, we work in this country with an "affective" critical method, seeking by persuasive kinds of paraphrase to lead the reader to a more intense and sensitive kind of response to a given work.

Many of our younger critics now feel uneasy about this sort of approach, assaulted as they are on all sides by transatlantic and continental theories claiming to be more scientific and using a highly technical specialist vocabulary and a style that defies quick reading and immediate understanding. Is it not time we joined in the search for more scientific approaches to literature? Or, as Hilda Schiff puts it in her introduction to the book under review: "the transformation that is overtaking us inside the field of English is, and must be, one of methodological awareness if progress is to be made". She deplores "the real theoretical backwardness of English studies as compared with other disciplines" and has gathered together half a dozen essays—papers delivered at a symposium held by the English Association—in an attempt to "measure the astonishing distance that English as a field of study has travelled in this century, and to chart the courses that it is likely to take in the future".

The essays are all interesting but do not cohere into any sort of intelligible picture or programme. George Steiner is concerned with English as a world language, which [illegible] of American English; with the vitality of American literature as opposed to "the austerities, the [illegible] thrift, which characterizes so much of the prevailing anti-rhetoric in educated British speech today"; with "the disastrous range of sub and semi-literacies" now found in Britain (he seems to believe that sub and semi-literacies in the United States are associated with vitality and promise, while here they are not: perhaps a period of subjection to American television advertising would make him more sceptical on this point); with the problem of giving an evolving mass society a stake in literacy"; with the course of action to pursue in the face of the disappearance of the elite criteria of accent, of literacy, of assumed reference and unforced recognition" that characterized the literary culture of Britain.

His concern is not methodological. [illegible] to identify problems and [illegible] an English curriculum that [illegible] contribute towards their solution. It is Arnoldian and Leavisite in its insistence that "to be just now a teacher of English in Britain is, indeed, a calling" and that a rethinking of "the organic functions of English in the educational process" is of the first importance of our civilization. No other contributor speaks in this tone or makes this kind of point.

Raymond Williams is concerned with changing definitions of literature, from its large Renaissance definition as writing distributed by print to its later more restricted definition as *imaginative* literature and its still later definition as imaginative writing that has certain values and a certain level of seriousness. This finally led up to a concept of literature as "writing distributed in print of an imaginative kind reaching a certain level of value and seriousness, written in the past". Professor Williams wants to widen this definition, to "push beyond the limited definitions of an earlier period". He is concerned with *communication*, and with "all forms of discourse, in speech and writing, as acts of social communication", and he wants the critic to concern himself primarily with the processes of production (as opposed to consumption) of such discourse.

We must attend to "the whole range of writing", we must understand how they reflect the meaning and values that embody "the corporate culture of a period", while at the same time perceiving the "residual meanings and values" that survive from earlier phases of society and being on the alert for the "emergent culture" that is signalling to us from the "attempt to create new meanings, new significance, new values, new practices in direct literary terms by creating new conventions and new notations". He ends by emphasizing "the problem of discerning the pre-emergence of a structure of feeling". To all this we are inclined to say, "Yes—well—all right—go ahead—that seems interesting" rather than "Ah, so that's the great new exciting method".

Leon Edel contributes an engaging dialogue about the poetics of biography that is a voice from an earlier generation. It stands out from the rest of the book in its relaxed discursive manner and its aim of showing how and why biography requires special kinds of insight and structure, with some interesting examples from Auden's *A Certain World* which is effectively searched for the frequent autobiographical give-away.

Jonathan Culler writes with model clarity on "Structuralism and Literature" and makes the case for a structural poetics, which "must enquire what knowledge must be postulated to account for our ability to read and understand literary works". He shows very persuasively, with some simple examples, how "structuralism leads us to think of a poem not only as a self-contained organism but as a sequence which has meaning only in relation to a literary system, or rather, to the 'institution' of literature which guides the reader". He discusses and illustrates the "various codes of expectation" which guide us in reading. This is an excellent essay to put in the hands of an innocent but interested student who wants to know what structuralism has to offer to the literary critic: a bibliography tells him where to go from here.

Christopher Butler, in an essay on "Tragedy and Moral Education", tries to show "how literature in general and tragedy in particular has profound moral effects provided we accept that literature throws light on the way we see the world and the beliefs we entertain about it". It is all very "prescientific" in Professor Hrushovsky's sense and in some respects even more old-fashioned in its style of argument and its objectives than Leon Edel's dialogue. One wonders about the linguistic sensitivity of someone who can write about "the main protagonist" of a tragedy. Butler concludes that "we can look to tragic literature to gain a much more complex and penetrating picture of the world than we possess in our ordinary moments". There needs no ghost, my lord, come from the grave to tell us this.

One would surely agree, somewhat impatiently, with Terry Eagleton that "the aim of Marxist criticism . . . is to expose the ideological tendentiousness implicit in the familiar narrowing of the social to a question of corn-mills and bread riots" (though I do not know any modern critics who are guilty of this, and whether, where it is done, it is "ideological tendentiousness" or mere superficiality of thought that is responsible can be argued), and ask him to tell us as positively and precisely as he can just what it is that the Marxist literary critic does. He does not do this. He tells us that Marxist criticism cannot consider itself one approach to literature among other approaches, any more than Marxism as such can consider itself only one interpretation of history among many. It is the only correct one. (Eagleton does not himself use this familiar Marxist adjective but puts the case rather more pretentiously: "Marxism claims to provide a scientific theory of social formations together with the practice of transforming them; and that claim entails the proposition that, until such a revolutionary transformation has taken place, its own analysis cannot be outstripped by another." The notion of analyses outstripping each other is somewhat bizarre.)

The body of Eagleton's argument is conducted too abstractly to be capable of either proof or disproof. Since his whole essay takes up fewer than 10 pages—it is the shortest in the book—we can attribute to the exigencies of space the abstractness and the lack of any concrete illustrations (except the throw-away familiar example of Marx's preference for Balzac and the argument that the right-wing conservatism or near-fascism of Pound, Yeats, Eliot and Lawrence can make for greatness because after all it was fiercely anti-bourgeois, transcending "the superannuated liberal bourgeois heritage of a Virginia Woolf or an E. M. Forster").

For the most part what we get is Marxist criticism's view of itself couched in its own terminology, a terminology which assumes the rightness of that view, so that a non-Marxist critic who wants to argue another position would first have to dismantle the whole apparatus of discourse through which the discussion is presented to reveal the ideology underlying it. And that would take much more space than the essay itself.

The most interesting part of the essay is the sympathetic account of the critical position of Pierre Macherey. "For Macherey, the text is . . . always unachieved, 'decentred', irregular, dispersed, constituted by a conflict and contradiction of meanings, and a scientific criticism will seek for the principle of diversity." There are, in George Eliot's novels for example, kinds of incompleteness, moments of silence, resulting from conflicts and contradictions that show the writer reaching out to say more than her ideological condition allows. What the work cannot say, but Macherey, with Eagleton's implicit approval, tells us, is that "this conflict is itself an insurmountable contradiction in bourgeois ideology, which only a revolutionary social change could possibly abolish". Aldous Huxley, in *Brave New World*, showed us a society after a revolutionary social change. The conflict and contradictions are indeed abolished. So is literature.

George Eliot's novels, forbidden to recognize the "truth" that only revolutionary social change could solve the contradictions they reveal, [illegible] structural dissonances, unwarrantable interventions". In other words, they are forced into becoming interesting and reverberating literary works rather than fables or tracts. I suppose a Chinese opera condemning the Gang of Four as capitalist roaders has its own contradictions, but they are of a rather different kind.

"What we offer", says Hilda Schiff in her introduction, "is a coherent set of current approaches to English studies, extending from the traditional to the emergent". But the coherence is notably absent. So for the most part is the scientific rigour that Professor Hrushovsky thinks we need so badly. But the book has interest and value in spite of this. One unexpected implicit moral emerges: if your criticism cannot be "scientific" it is probably better that it should be prescientific than pseudoscientific.

David Daiches

Warming the teapot

E. M. Forster's Howards End: Fiction as History
by Peter Widdowson
Sussex University Press, £3.50 and £1.75
ISBN 0 85621 067 6 and 068 4

E. M. Forster

This is the sixth title in the Text and Context series, edited by Arnold Kettle and A. K. Thorlby. It is described as a "series for students" and the dustjacket begins with the claim that "More and more often students are asking why they should be expected to read the established classics of literature". Apart from cynically wondering whether that statement was not written several years ago, one is bound to see it as a transparently pedagogic device, a pseudo-question to which a number of lively and distinguished critics have been invited to give real answers.

In the case of *Howards End*, it is a bit premature to label this favourite but notoriously flawed modern work as an "established classic of literature". Forster's reputation has reached unexpected heights in the past thirty years, but it is by no means safe from the sceptical student. Peter Widdowson is honest about the problem of matching the "context" of the modern world to the "text" of social reality as Forster described it, but his conclusion that this is a "fine liberal-humanist novel" is the conventionally indulgent one.

This might seem strange, since the author mounts a left-wing critique of liberal humanism, but in practice the weaknesses of liberalism are allowed to condone those of *Howards End*—and vice versa. Where Forster was once seen as the supreme exponent of "personal relations", he now sustains a familiar, retrospective diagnosis of "liberalism in crisis".

The textual criticism in this book is always perceptive, sometimes outstandingly so. Widdowson outlines Forster's conscious intentions and then coolly exposes the intrusive plotting of *Howards End*, the blandness of much of its rhetoric and the "faking" involved in the novel's affirmative ending. But he fails to draw the obvious conclusion from these faults, and his sureness in analysing the literary text is by no means reflected in the presentation of "context", which takes up the first half of the book.

What is relevant in a novel's "context" is a matter of critical choice, and is bound to be partially subjective. Peter Widdowson describes a number of contemporary political and cultural events, many of which happened after *Howards End* was published; I personally would rather have read more on the sociology of the middle classes, mentioning the work of Laslett and Aonun, and not merely George Dangerfield. But any approach must be weakened by unexplained references to such things as "Lloyd George's Mansion House speech" or "the Cambridge 'Carbonari'", which are all too likely to be copied uncomprehendingly into students' essays. Nor should a textbook like this spell Lloyd George with a hyphen, or give the date of Galsworthy's *The Island Pharisees* as 1909.

Forster's eventual abandonment of novel writing is several times mentioned as part of the "context", but nowhere convincingly explained. The parallel that Widdowson draws with Hardy surely obscures this particular issue. Hardy—to put it crudely—ducked out of a vicious public controversy and went on to become a major poet. Forster's creative impulse failed, or maybe his nerve. We are often told that the civilization he understood had broken up; as Widdowson puts it, "For Forster, the world had gone wrong after 1914". Forster's anguish was genuine, but so was his prolonged enjoyment of a comfortable, civilized existence at Abinger and King's.

Hardy's novels apart, the "context" offered by this book contains very few contemporary literary texts. For those students and others reluctant to accept *Howards End* as an established classic, literary comparison remains the important test. Is Forster's pastoral vision really superior or even equal to that of earlier writers such as Jefferies and Morris? Is his portrayal of the commercial classes really more acute than that of his fellow Edwardians? Can his power of imaginative prophecy even be mentioned beside the best of Lawrence?

All these questions ought to be put, and where they are not put the issue of literary value is dodged. The consensus about *Howards End* which this book assumes is (I venture to suggest) largely imaginary. Do we really need to shield our students from Lawrence's outburst ("Business is no good"), which is not quoted here? And what about this comment, which beautifully captures both the novel's charm and its ultimate effeteness: "Putting my weakest books to the wall last night I came across a copy of *Howards End* and had a look into it. But it's not good enough. E. M. Forster never gets any further than warming the teapot. He's a rare fine hand at that. Feel this teapot. Is it not beautifully warm? Yes, but there ain't going to be no tea."

What a blessing that Katherine Mansfield did not know she was snubbing one of the "established classics of literature", which generations of students would be taught to revere!

Patrick Parrinder

The Psychology of Consciousness
2nd edition
Robert E. Ornstein
320pp., paperbound, 0.15.573082.7 £4.20/$5.95
The second edition of this extremely successful and influential work in psychology examines the nature of consciousness, taking as its major organizing principle the functioning of the two hemispheres of the brain. Writing in a compelling highly readable style, the author discusses the results of research on left-right hemisphere functioning and raises implications about it for psychology, education, biofeedback and other areas of human experience. Dr Ornstein goes beyond Western scientific thinking and research to incorporate Eastern psychologies and their pronounced emphasis on "right hemisphere" activities. The book thus provides a synthesis of two modes of consciousness and knowledge, two ways of experiencing—sequential and holistic, rational and intuitive, linear and nonlinear, Western and Eastern.
Harcourt Brace Jovanovich Ltd.
24-28 Oval Road, London NW1, England

BOOKS

"Bargaining for a horse", 1835, by William Sidney Mount, from Bright Stars: American Painting and Sculpture since 1776, by Jean Lipman and Helen Frenc, published by Phaidon at £19.95.

Contextual history

The Antislavery Appeal: American Abolitionism after 1830
by Ronald G. Walters
Johns Hopkins University Press, £8.25
ISBN 0 8018 1861 3

Competition and Coercion: Blacks in the American Economy by Robert Higgs
Cambridge University Press, £8.00
ISBN 0 521 21120 4

In the field of antislavery studies scholars have been enthralled by the motivation of the abolitionist leaders and their quarrels, especially the 1840 schism, by the nineteenth-century reaction in North and South, questions of regional strength and religious inspiration, the role of black and women abolitionists, the early stages of the movement and its political importance. Influenced perhaps by the resurgence of radicalism in America during the 1960s, and by a desire to locate a consistent tradition of dissent in American life, modern writers have tended to emphasize abolitionist extremism, at least among Garrisonians.

Dr Walters's work, however, in line with that of Bertram Wyatt-Brown and Lewis Perry, turns away from antislavery conflicts in search of ideas and objectives entertained by all abolitionist groups. In addition it attempts to relate abolitionist thought to prevailing American values and culture, and thus show more clearly than is usual the intellectual or institutional constraints within which reformers were obliged to operate, and the way applications which they found traditional beliefs. For these purposes a thematic approach is adopted and familiarity assumed with the basic names and history of the antislavery movement. None the less, though aiming to define the core of abolitionism and avoid competing with the recent syntheses of Martin Duberman and Gerald Sorin, the author has used a large range of sources.

This is not consensus but rather contextual history: the intention is not to suggest that there were no differences between abolitionists and their opponents, Northerners and Southerners, but rather to show "what was antebellum and American about antislavery". What emerges from a subtle if brief account of such topics as divisions and methods in abolitionism, religion, morality, social control, the family, the economy and the Union is a picture of a rapidly changing civilization with which many citizens, including reformers, felt uneasy, and upon which they sought to impose a comforting order in the interest of the individual as an independent moral and economic agent.

Opposed to the corrupt uses of power, wherever these occurred, abolitionists found in their organizations a kind of unifying church. Essentially men and women of their own time, however, they were often unable to rise above contemporary prejudices and inconsistencies. Thus, for example, they evolved no single view of human nature to guide them in debates on race questions, appealing both to arguments about an individual moral sense and to environmentalist defences of the slave which depreciated the role of the individual. Similarly with the "woman question" abolitionists took refuge in acknowledging differences between the sexes while denying their relevance; the results could be disconcerting. The discussion of the nationalist pride and middle-class response among antislavery advocates to economic change makes a persuasive case for connexions between antebellum and postbellum reform attitudes.

With such an interesting and imaginative study, it is simply a pity that we still learn very little about the antislavery rank-and-file, and that the comparisons with the language and preoccupations of the anti-abolitionists are not more extensive.

The examination of blacks in the American economy after 1865 by Robert Higgs is equally clear, confined, and controversial, equally concerned with groups and themes rather than individual motivations or fortunes. He is preoccupied with the freedmen who struggled to improve their lot under the contradictory pressures of a competitive economic, but a coercive racial system. As one would expect, this is a quantitative analysis, so far as the surviving evidence will permit.

Revisionist scholarship has long focused on the political achievements of the blacks during Reconstruction, while deploring its economic failures and the effects of subsequent discriminatory legislation. Although he does not query the political account, beyond attaching less importance to legislation than to the refusal of the whites who controlled the legal machinery to provide equal protection to the blacks", thereby allowing "private" coercion to flourish, Professor Higgs argues that the taste for discrimination among whites was not always indulged at the expense of economic self-interest. Hence the comparable productivity of white and black workers and the high level of competition for labour deterred farmers from racial discrimination. Where discrimination did affect the postwar economy it was not always on account of race.

While to no sense denying the deprivation of large sections of the black population as late as 1914, the author is at pains to emphasize the achievements of blacks in terms of land ownership, improved share tenancy agreements, their standard of living, the acquisition of job skills and income increases.

Given the nature of this study it is unfortunate that the implications of quantitative work on the economics of slavery are little discussed beyond brief doubts of Fogel and Engerman's figures on the incidence of paid labour under slavery and the deterioration of the skill composition of the black labour force after 1865. The share cropping system is thus debated and partly defended—many black and white Southerners preferred it to wage payments and gang labour—without reference to its wider ramifications for that region. Other important issues, such as the role of industrial education in the South, are dealt with too briefly.

Christine Bolt

Out of the slave ships

Black Culture and Black Consciousness: Afro-American Folk Thought from Slavery to Freedom by Lawrence W. Levine
Oxford University Press, £9.75
ISBN 0 19 502038 X

A Harvard professor once described folklore as "the most sentimental and the most anti-intellectual scholarly discipline in America". Since then, its value to the academic study of numerous subjects has become abundantly clear. Professor Levine's excellent monograph demonstrates conclusively the importance of folklore material in the historian of the Afro-American experience.

It is a ground-breaking work, but not in the sense the publishers claim. The traditional notion that slavery was "an unending round of degradation and pathology" has already been demonstrated by Blassingame and Genovese (whose work the author acknowledges). A more recent book, Herbert Gutman's *The Black Family in Slavery and Freedom, 1750-1925* (1976) also arrives at Levine's conclusion: slaves adapted to their New World situation in their own way, building up a complex folk culture that enabled them to sustain group cohesion and resist white cultural dominance.

Where Herbert Gutman concentrates on family and kinship structure, Levine studies the whole area of folk expression, spirituals, secular songs, music, dance tales and popular beliefs. He not only gives the fullest picture yet of slave culture in the United States but also explores the effect of freedom upon black styles and content.

Black Culture and Black Consciousness reveals the internal consistency of early black culture, each of its forms providing slaves with psychic relief and a sense of mastery and control denied in their immediate environment. In their verbal and musical art they borrowed from all available sources, but the final product was distinctively their own.

The impressive first section, "The Sacred World of Black Slaves", contains a sophisticated consideration of spirituals, in which God, Satan, Heaven and Hell were concrete presences. Here arises a recurring theme of the book: the reality of black culture. The persuasive account of the animal trickster, who often functioned as moral agent of the world's irrationality, moves these particular slave tales closer to Amerindian versions. Like the realistic stories about slave John, they too avoided romanticism and sentimentality. And both taught the tactics of survival in a hostile world.

About half the book is devoted to the period after Emancipation when ex-slaves and their descendants were encouraged to emulate white models, to turn away from the past. Levine traces the complex processes of change and continuity as they operated together in such genres as gospel music and the blues. The summary of the ghetto game of verbal insult known as the Dozens is welcome, for the author shows that here too, in teaching the ability to control one's emotions, a survival ritual is involved.

The final section, "A Pantheon of Heroes", examines the transformation of guileful slave heroes into bad, brutal types and, also, moral hard men, exemplified by the boxers Jack Johnson and Joe Louis. It is a pity Levine chooses to end this section (and his book) in the 1940s. Muhammad Ali (given one page as a black "man of words") is clearly the logical successor to Johnson—arrogant, proud, boastful and ostentatious. Johnson was essentially a defensive fighter; by 1970, Ali had fought 150 fights without having a tooth knocked out. Both boxers were disinclined to satisfy the blood lust of (largely white) fight fans.

Thoroughly researched and elegantly written, this book is a triumph of humane scholarship. The black poet, Don L. Lee, has written, "Black artists are culture stabilizers: bringing back old values and introducing new ones". As Levine demonstrates so well, that has been true since the arrival of the first slave ships.

Ralph Willett

Indian version

The Vision of the Vanquished: the Spanish Conquest of Peru through Indian eyes, 1530-1570
by Nathan Wachtel
Harvester Press, £10.50
ISBN 0 85527 119 1

When it first appeared in French in 1971 this book drew immediate acclaim both from reviewers in the Latin American field, and from devotees of the *Annales* approach to history. "The English-speaking world cannot afford to leave this work untranslated", one British historian wrote, but our own historical journals scarcely noticed it.

Professor Wachtel's subject—the cataclysmic conquest of the Inca empire by Spain in the 1530s and the establishment of colonial rule—has attracted many. The story of the *conquistadores* is well known, but we have understood little of what the conquest meant to the Indians. Wachtel first examines, therefore, surviving Indian interpretations. In addition to the writings of those who lived through or witnessed the conquest he uses a fresh source, twentieth-century folklore from Peru and Central America, which he subjects to structural analysis along the lines of Lévi-Strauss. The prevailing theme in Peru, he concludes, is that of "disjunction", of continuing conflict between Spanish and Indian cultures.

In part two Wachtel examines more closely the "destructuration" of Inca society after 1532. The structures of the Inca empire, economic, social, political and religious, formed, he suggests, a coherent system and changes within it were a consequence of its own internal logic. The external shock of the Spanish conquest, however, promoted the rapid breakdown of society. Though some structural elements survived from the Inca empire the coherence of the system vanished. For the Indians, therefore, the world became absurd. Some groups, adjusted. Some of the camera (chiefs), on whom Spanish government depended, learnt the language and began to imitate Castilian styles of dress and behaviour. Such acculturated elites, however, limited. At the mass level most Indians resilient in their commitment to tradition. Continuity could not replace their dislocation in earlier beliefs, which allowed the growth in the 1560s of a widespread millenarian movement, Taqui Onqo.

To conclude the analysis of resistance and acculturation the author again adopts a wider perspective and compares the Indian experience in Peru both to Mexico and to peoples on the frontier of the empire who successfully resisted Spanish domination.

A review of this length cannot do justice to the wealth of ideas in the book. Occasionally one wonders whether too many conclusions are being drawn from fragmentary data, but the imaginative and provocative nature of the hypotheses Wachtel suggests, together with his modest awareness of the sources limitations, justifies his approach. No future historian of sixteenth-century Peru can afford to neglect or ignore Wachtel's conclusions or indeed his methodology.

It would be a pity, though, if only Latin-Americanists read this book. Some of the themes discussed—resistance, collaboration, millenarism and acculturation—occur elsewhere in African and Asian history. But the book deserves to be seen wider audience. Wachtel's intellectual origins lie in the *Annales* school. He believes in "total" history, and criticizes those overloads which concentrate on events while ignoring the structure of a society, and those which compartmentalize the past into political, economic and social segments. One can certainly recommend this book to those whose interest in the *Annales* approach was quickened by Peter Burke's article in these pages some weeks ago (THES May 27, 1977). *The Vision of the Vanquished* is an important and provocative book whose translation into English should be welcomed.

R. M. Miller

Civil liberties

The Great Rights of Mankind: A History of the American Bill of Rights
by Bernard Schwartz
Oxford University Press, £7.25
ISBN 0 19 502191 6

Schwartz begins his legal-constitutional history of the guarantees of United States civil liberties by drawing attention to the shortcomings of their English antecedents. He notes that Magna Carta was the product of baronial selfishness and only its susceptibility to reinterpretation made it an important, if unsatisfactory, antecedent of the American Bill of Rights, the popular name for the first 10 amendments to the United States Constitution.

Schwartz emphasizes the fact that the English Petition of Right (1628) and Bill of Rights (1689) were mere assertions of liberties, not guarantees. He reviews the documentary origins of the United States Bill of Rights and, excepting the rights of petition and to bear arms (provided for in the English Bill of Rights), finds them in indigenous colonial charters and declarations.

He remarks that England prosecuted Thomas Paine for libel in the very year, 1792, when the United States Bill of Rights was ratified. The United States Bill of Rights was superior to English guarantees because it had the status of fundamental law, and was upheld by the process of judicial review. Thus liberterian principles survived fluctuations in popular mood.

The Great Rights of Mankind is clearly written, concise and scholarly, and includes several useful chronological tables. It contains a shrewd assessment of constitutional developments since 1792, placing particular emphasis on Supreme Court interpretations of the Fourteenth Amendment (1866), at first treated as an instrument for defending corporations from state legislatures and only later, applied, according to its framers' intentions to provide equal protection to Americans, regardless of race, against infringements of their liberties. Schwartz shows how as public opinion changed, the Fourteenth Amendment became the means of guaranteeing federal civil liberties (as defined in the broad phrased United States Bill of Rights)) of women as well as blacks.

Schwartz legitimately defends the United States Bill of Rights against the charge that it did not outlaw slavery, on the ground that equal protection was not a contemporary expectation in the late eighteenth century. But similarly, of course, King John and the Stuarts may be defended against anachronistic criticism.

More seriously, Schwartz is inconsistent in praising both the principle of fundamental law and the flexibility of his key clauses. For the United States Constitution is subject not only to the vagaries of the Supreme Court but also to the process of amendment.

Schwartz provides little background on the social backgrounds of law, legal decisions, lawyers and amendments. When he does venture into the social sphere he is clearly shaky, as in his unsubstantiated claim that American slaves never have received fairer treatment in the courts than their English counterparts. Criminal statistics, the Red Scare of 1919, and McCarthyism escape his attention. It is probably this neglect of social history that has produced the central flaw in Schwartz's book—namely, the absence of any explanation of *why*. If at all, Americans should have been ahead of England in terms of "the great rights of mankind".

Finally, there is surely something sad about a book which the author expresses concern for "equal protection" and even "mankind", but approaches history in a chauvinistic spirit. *The Great Rights of Mankind* would be a useful and admirable work if it ranked as a legal-constitutional chronology, but history it is, disappointingly.

Rhodri Jeffrys-Jones

Introduction

Linear Algebra (second edition)
by Michael O'Nan
Harcourt Brace Jovanovich, £8.50
ISBN 0 15 518560 8

Linear algebra is now one of the basic mathematical disciplines. Its basic techniques such as matrix algebra and the solution of systems of linear equations are as widely taught as is the calculus. O'Nan's book caters for the great majority of students of linear algebra by starting from scratch and devoting the first third of the book to the basic manipulative skills before covering the basics of abstract linear algebra. The book is usable as an introduction for all students and provides all the knowledge that most students will need. Major users of linear algebra will need a further course.

The material covered in linear algebra texts is fairly standardized. Differences among texts lie in the presentation. The strength of O'Nan's book is the wealth of examples and exercises. The author has chosen many illustrative uses of linear algebra from chemistry, economics, probability, electrical circuits, demography etc, including one of my favourites—balancing of chemical equations—and numerous straightforward examples. In order to keep the presentation suitable for a first course, full generality is avoided or postponed till later. For example, only real or complex scalars are used and the matrix of a transformation is first defined only with respect to standard bases.

There are some idiosyncrasies in the presentation of the basic skills in the first chapters: "Systems of Linear Equations", "Vectors and Matrices", "Determinants". Linear equations are briefly treated using Gaussian elimination but without any particular order, possibly starting with the third equation to eliminate the second unknown. There is no mention of the use of the augmented matrix. The notion of matrix multiplication could be made clearer by mentioning that $(AB)x = A(Bx)$ actually defines AB. Determinants are introduced using column operations which seems to divorce them too much from linear equations and elimination.

The other four chapters—"Vector Spaces", "Linear Transformations", "Products", "Eigenvalues and Canonical Forms"—cover the basic ideas or what seems to be the right level for an introductory course. Rank is only defined as column rank, which also seems to divorce this notion from linear equations. Otherwise the development is direct and logical.

This is a good textbook at its level, but the author's failure to grasp the unification of linear equations, determinants and rank by means of the single process of elimination keeps me from rating it higher.

David Singmaster

Mathematical physics

Mathematical Methods for Physics by R. W. Wyld
Benjamin, £22.55 and £13.20
ISBN 0 8053 9562 and 9857 0

Professor Wyld's contribution to the Benjamin Lecture Notes and Supplements to Physics Series is based on courses given over a number of years to first year graduate students at the University of Illinois, and it is appropriate for British undergraduate courses in physics, engineering or mathematics.

The book is divided into three fairly independent parts, six chapters on homogeneous boundary value problems and special functions, three on inhomogeneous problems, Green's functions and integral equations, followed by four on complex variable techniques. A knowledge of vector calculus is assumed, but surprisingly there is no treatment of linear algebra and the algebraic eigen-value problem, which touches so widely used in many parts of mathematical science, is hardly there any discussion of group theory.

The level of mathematical rigour is relatively low, and the author has made a conscious attempt to write a book that is comprehensible to the average student. Some arguments are made in greater algebraic detail than in comparable texts, and all the mathematics is highly applicable.

The price is very high even for a very lengthy paperback, and it is difficult to make a recommendation for student purchase; yet there are some good features which make it worthy of intensive undergraduate or graduate scrutiny: a nice treatment of spherical Bessel functions, a very physically motivated approach to the Green's function, and a clear account of the applications of contour integration to integral transforms.

A hardback copy will make significant inroads into the hard-pressed library budget, but it is a sound investment. Students will find it a valuable reference text, and a useful stepping stone to understanding the traditional classic texts of mathematical physics.

J. A. D. Matthew

BOOKS

Fluid motion

Physical Fluid Dynamics
by D. J. Tritton
Van Nostrand Reinhold, £5.50
ISBN 0 412 30131 6

A reviewer actively engaged in research will always find it nearly impossible to give unqualified approval to any textbook on his own subject, but Dr Tritton has produced one that matches my prejudices much better than most.

For the most part, books on fluid dynamics fall into two categories, those intended for engineers and those intended for applied mathematicians, but undergraduate courses are not well served with textbooks on experimental fluid dynamics. The mistake is most serious for students of physics who are interested in natural flows occurring in the atmosphere or in the ocean, and Tritton has written a book that is physical and experimental in its approach rather than mathematical or technological. It would form an excellent background to a course for students of physics and the earth sciences.

Only incompressible flows described by the Boussinesq approximation to the equations of fluid motion are treated, that is, the flow Mach numbers are small and the fluid density is determined by the temperature and chemical composition and is not dependent on the pressure. Throughout, much use is made of the principle of dimensional similarity, and the limitation imposed by the approximation is clearly expressed in terms of non-dimensional parameters.

The experimental approach to fluid dynamics continued by the late appearance of the Navier-Stokes equations in chapter five, after fairly detailed descriptions of flows in pipes, past circular cylinders and convection in horizontal layers. Later chapters treat steady flows (both viscous and inviscid), lift, convection, flow in rotating and stratified fluids, flow instability and turbulence, with only the necessary minimum of mathematics and with many diagrams and flow visualization photographs to give the reader a clear understanding of the nature of the flows.

Useful additions are the final chapters on techniques of flow measurement and on the application of the earlier material to the understanding of numerous flows on scales ranging from micro-organisms to solar granulations or continental drift. Some of the attached problems may, as the author says, be too difficult for a beginner but they supplement the text in a useful way. Help could be obtained by use of the very full bibliography.

Tritton has produced a textbook that is well adapted to provide a basis for courses in fluid dynamics for experimentally orientated students of physics.

A. A. Townsend

Probability

Elements of Probability Theory
by H. Fortet
Gordon & Breach, £30.00
ISBN 0 677 02110 0

Probability Theory
by J. S. Milton and C. P. Tsokos
Addison-Wesley, £19.35 and £10.80
ISBN 0 201 07604 7 and 07605 5

The Theory of Stochastic Processes
by D. R. Cox and H. D. Miller
Chapman & Hall, £4.95
ISBN 0 412 15170 7

Elements of Probability Theory is a translation from the French of a book originally published in 1960. The preface refers to a second volume but to my knowledge this never appeared. Of the six chapters in the book the first is elementary and deals with combinatorial analysis and its application to genetics and statistical mechanics. The second and third chapters contain outline accounts of the properties of measures, the Lebesgue integral, modes of convergence, Lebesgue-Stieltjes measures and transforms. The next two chapters deal with random variables, random vectors, independence and conditioning. The sixth and final chapter is concerned with the laws of large numbers, ergodic theory and central limit theorems.

Very few applications of the theory are discussed, but those that are included are unusual and little known. There is an application of geometrical probability to the theory of vision and an application of limit theorems to a problem concerned with fluctuations in the concentration of the atmosphere. Each chapter has a small number of exercises, which are mainly theoretical and vary considerably in difficulty. Indeed the style of the whole book is very idiosyncratic. In the preface the author declares he is aiming for the non-specialist, so many results are not proved. Yet in spite of this disclaimer, topics such as Hilbert spaces and the Perin integral of vector valued functions are mentioned. In fact the book is well worth reading by any serious student of probability, but because of its unusual style it is definitely not suitable for anyone approaching the subject for the first time.

Finally, the book is reproduced from typescript, the presentation is poor and the translation leaves much to be desired—in consequence the price is ridiculous.

The book by Milton and Tsokos is altogether on a much smaller scale. The first two chapters survey some necessary analysis and this is followed by chapters on probability, random variables, random vectors and independence, types of convergence and the weak and strong laws of large numbers. The book does not get very far—this there is no treatment of characteristic functions or conditioning and no proof of the central limit theorem. Indeed there is less probability here than in the well-known book by Kingman and Taylor. Yet despite this there are unnecessary digressions to include the Riemann-Stieltjes integral and almost uniform convergence.

But what does characterize this book is the slow and careful proofs of those topics which are covered—for example, it takes two sides to prove that any monotone function is measurable. The pace is so slow that before the book will be suitable as the basis for a lecture course there is room for little, but it may well be useful for self-study before embarking on a more advanced book. Finally, unlike the book by Fortet, no applications at all are discussed.

Cox and Miller's book is a reprint in paperback that was originally published in 1965. Although the contents are now beginning to show their age, the book is still deservedly very popular as an elementary and fairly non-mathematical introduction to the study of stochastic processes and their applications.

R. J. Reed

Correction

The review of E. J. Holl's *Radiation and Life* in *The THES* for July 22, 1977, was by Professor Joseph Rotblat and not John Rotblat, as printed.

Motivating maths

Vector Analysis
by N. Kemmer
Cambridge University Press, £12.00 and £3.95
ISBN 0 521 21158 1 and 29064 3

Vector Fields
by J. A. Shercliff
Cambridge University Press, £13.50 and £4.25
ISBN 0 521 21306 and 29092 9

There are two really good ways of writing a textbook on a well-known topic—with the enthusiasm and flash of a young man, and with the wisdom of a lifetime of teaching. Both methods can provide memorable treats, and Kemmer's example of the second does so.

His is a treatment of fields avowedly addressed to physicists so, for example, integral theorems present no problems, since all surfaces are easily triangulable, and in any case the differential operators are defined by limits of certain integrals; though it must be said that careful derivation of the differential definition is then given. But what is unusual is the detail into which Professor Kemmer goes to motivate and clarify the mathematics instead of relying on the physical applications to do this later.

The key to the whole presentation is the analysis of areas into "quasi-squares" and of volumes into "quasi-cubes" so that the "theorems" in this book really are true and are proved for a wide enough class of curves and surfaces to cover any likely physical use. There are eight or nine sets of examples with comments and answers at the back.

It seems unfair to cavil at one point, which is pervasive; the typeface used for vectors is not sufficiently different from ordinary italics used for scalars. The result is an aesthetically pleasing page, but the occasional chance of confusion. None the less the book will be very useful indeed for undergraduates in physics and chemistry and also in first-year mathematics courses (where it may well throw a light of understanding where more general proof can follow later).

It is surprising to see the same publisher following with another book with a similar title, but a closer look at Shercliff's book banishes surprise, in the first place it is addressed to second-year engineering students; though it would be very good too for all those mentioned above, for it is a fount of good ideas very closely tied to reality. But the real reason must be that the whole treatment is complementary to Kemmer's. As the author says "the mathematical concepts are allowed to favour themselves out of the need to describe the physical world quantitatively". Essentially he is concerned with electromagnetic theory and fluid mechanics but this is far from being one of those books on vector analysis in which unsatisfactory partial versions of these subjects form the later chapters.

The matter is very well integrated: two examples must suffice. The whole subject of waves and waveguides is introduced by a simple investigation, without any differential equations, of how long it takes to charge a parallel plate capacitor from one edge of the gap, assuming a "charging zone" moving across the capacitor. It is then found that it moves with the speed of light. A second example is the application of Kelvin's theorem (on constancy of circulation) to derive the distribution of vorticity in a jet, by no more mathematics than drawing a plausible figure, and so answering the question of why it is harder to suck out a candle than to blow one out. The examples, as might be expected are more practical than Kemmer's but are numerous and well-chosen. The two books together should meet a real need to provide adequate background, both physical and mathematical, for all those who have use vector fields.

C. W. Kilmister

Materials science

Physical Properties of Materials
by W. C. Lovell, A. J. Avery and M. W. Vernon
Van Nostrand Reinhold, £12.00 and £5.95
ISBN 0 442 30096 4 and 30097 2

For some fifteen years or more there has been a debate about the existence of a genuine undergraduate discipline known as materials science and whether it is better to study a full course to honours level in physics, chemistry or metallurgy, and to study a more general course in materials or the postgraduate stage.

This book aims to provide an introduction to materials science and a base for approaching new developments. It is claimed to be suitable for first and second year undergraduates and even for HNC students. The choice of topics is wide and several of the chapters are very basic and intended to make some fundamentals available. This means that complex series are dealt with, but some topics, such as Miller indices, are not covered, and some basic bonding. This is made clear in general terms on p33 but the answer to Q1, p41 states the bonding to be only covalent. In the quotation of the formulae for the minimum concentrations of Schottky and Frenkel defects (p36) the factor 2 which should appear in the denominator of the exponent of the formula for Frenkel defects is omitted and an important distortion between the two types of defect is missed. The diagram of the floating zone experiment shown on p68 shows the molten region as being of larger volume than the solid. Many materials occupy a smaller volume when molten (e.g. silicon) and this makes for the stability of the floating-zone process.

The book makes a good attempt to provide an introduction to the subject and apart from a few criticisms the explanations are sound. It would be a useful supplement to a lecture course.

C. A. Hogarth

The chapters on electrical properties, dielectric materials and superconductivity cover a reasonable spread of topics at a fairly uniform level and a difficult concept such as Cooper pairs is described with a pleasant clarity. The treatment of optical properties is excellent and discusses many of the optical properties of solids and the related techniques used for investigating structural properties. Modern topics such as electro-optics and diode lasers are included and some indications of the applications of optical properties is given. The treatment of magnetic properties includes modern topics such as square-loop ferrites and magnetic bubbles. References to books for further reading are given and questions are set at the end of most chapters and answers provided.

In such a highly compressed book it is important that great care is taken in expressing ideas accurately. This has been done to a great extent but a few errors or misstatements have crept in. For example, GaAs must have some covalent bonding and some ionic bonding. This is made clear in general terms on p33 but the answer to Q1, p41 states the bonding to be only covalent. In the quotation of the formulae for the minimum concentrations of Schottky and Frenkel defects (p36) the factor 2 which should appear in the denominator of the exponent of the formula for Frenkel defects is omitted and an important distortion between the two types of defect is missed. The diagram of the floating zone experiment shown on p68 shows the molten region as being of larger volume than the solid. Many materials occupy a smaller volume when molten (e.g. silicon) and this makes for the stability of the floating-zone process.

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C. A. Hogarth

Classified Advertisements Index

NOTICE

We apologize to readers and advertisers that due to unofficial industrial action of the National Graphical Association Machine Managers employed by The Times Supplements, the August 5 issue of The Times Higher Education Supplement was not published.

Classified advertisements booked for that issue are published today in full. Because of this, certain closing dates are somewhat more imminent than normal and we ask readers to bear this in mind when replying. The establishments are aware of this.

Because of these difficulties, advertisements are not necessarily in their normal chronological order, and we, therefore, suggest to readers to refer to the index.

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Universities

OVERSEAS TEACHING POST

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Teacher Training Department based at Lampang Teachers' College.
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77 PT 7

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77 CO 132

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77 CU 143

Return fares are paid. Local contract is guaranteed with the British Council. Please write, briefly stating qualifications and length of appropriate experience quoting relevant reference number and title of post for further details and an application form to The British Council (Appointments), 85 Davies Street, London W1Y 2AA.

THE BRITISH COUNCIL

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Department of English

Notice of Vacancy

Applications are invited from specialists in Renaissance Drama (including Shakespeare) and/or Seventeenth Century (preferably with an interest in Milton). An appointment will be made at an associate or full professor with rank and salary depending on qualifications. Successful applicant is university teaching and scholarship publication are essential. Since the appointment involves the possibility of election as chairman for a three-year term (renewable), administrative experience will be considered a distinct asset. Send letter of application and curriculum vitae to the Chairman of the Selection Committee, Department of English, Wilfrid Laurier University, 73 University Avenue West, Waterloo Ontario N2L 3C5. Apply before November 1 1977.

Duties will begin July 1, 1978

Papua New Guinea University of Technology

1978 Academic Vacancies

Applications are invited from suitably qualified candidates for the following positions:

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LECTURER
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Salary range: Senior Tutor/Technical Instructor K6883-K9853; Lecturer/Senior Technical Instructor K10094-K13038; Senior Lecturer K14044-K18741. As at 18 July Kina 1=$A1.1293, $US1.2674, UK£0.73.31p.

Allowances additional to salary are payable as follows: married K2300 pa, single K1300 pa. In certain circumstances a child allowance of K166 pa is also payable. An assembly allowance and additional fares may be provided for children being educated away from their parents place of residence. Other benefits include furnished housing (here goods available or nominal rental), leave fares to place of recruitment every second year and sabbatical fares to Canberra, Australia each alternate year and six weeks' annual leave. Superannuation benefits apply in most circumstances. Study leave of six months will accrue after five consecutive years of service.

Appointment will be on contract basis for a maximum of three years in the first instance. The University reserves the right to make no appointment or to make an appointment by invitation at any stage.

The successful applicants would be expected to take up their appointment at the commencement, in February, of the 1978 academic year.

Applications in duplicate should include particulars of age, nationality, marital status, family if any, qualifications, experience, present post and the names and addresses of three referees from whom confidential enquiries can be made. Further information will be forwarded to all applicants.

Applications are required by August 22, 1977, and should be sent to the Registrar, the Papua New Guinea University of Technology, PO Box 793, LAE Papua New Guinea. A copy of application should be sent to the Association of Commonwealth Universities (Appointments), 36 Gordon Square, London WC1H 0PF, from whom further details of appointment and general information may be obtained.

UNIVERSITY OF WESTERN AUSTRALIA
Perth

UNIVERSITY RESEARCH FELLOWSHIPS
(Post-Doctoral)

Two Research Fellowships will be offered, to be taken up in the latter half of 1978. Appointments will be for one year in the first instance with the possibility of renewal for a second year. Fellowships could possibly be renewed also for a third year, but at competition with new applications. The Fellowships will be tenable in the following academic departments for work in the broad areas stated:—

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Geography: "Develop opportunities and intra-metropolitan migration".

The fellowships are intended primarily for PhD graduates from universities other than the University of Western Australia who have demonstrated ability in research, consultation, or other ways have demonstrated significant research potential. Salary will be within the range $A12,316-$A14,162 per annum, and appointees may be assisted, in exceptional circumstances, be considered for assistance to a superannuation scheme. Fellows will be given the opportunity to participate in teaching. Applications in duplicate, stating full personal particulars, qualifications and experience, and showing details of research interest should reach the Stalling Officer, University of Western Australia, Nedlands, Western Australia 6009 by September 16, 1977. Candidates should forward three referees, who should be asked to write immediately to the Stalling Officer.

UNIVERSITY OF NAIROBI KENYA

Applications are invited for the post of

SENIOR LECTURER/ LECTURER IN INSTITUTE OF COMPUTER SCIENCE

Senior Lecturer applicants should possess a PhD and have experience in teaching at Computer Science subjects. Lecturer applicants should possess a PhD or an MSc and have experience in teaching Computer Science. The Senior Lecturer would be responsible for administering the academic part of the Institute. Any applicant should at least be able to teach Fortran and one other major programming language. Proficiency in Cobol and/or computer management experience would be important. The appointees will be expected to teach undergraduate courses in Computer Science and to supervise students in other departments of the University and participate in further development of the degree course.

Salary scales: Senior Lecturer KE2,772 to KE3,600 per annum (the Shilling is currently worth £1 sterling=KE1.40). The Government may consider a higher salary in the range £2,981 to £3,870 p.a. (sterling) for married officer or £1,944 to £2,561 p.a. (sterling) for single officers. Allowances normally free of tax are: housing, children's education, leave fares and holiday visit passage. Free medical care is provided. Detailed application, including a sketch of research interests and teaching, should be addressed to the Registrar (Academic and Training), University of Nairobi, PO Box 30197, Nairobi, Kenya. Applicants resident in UK should also send one copy to the Inter-University Council, 36/38 Gordon Square, London WC1H 0PF. Further particulars may be obtained from either address.

AUSTRALIAN GRADUATE SCHOOL OF MANAGEMENT

UNIVERSITY OF NEW SOUTH WALES
Sydney, Australia

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Applications are invited from qualified persons interested in analysing management decision making processes using mathematical, statistical and computer methods and models.

Salary per annum within the range $A19,799-$A22,605 (Senior Lecturer) $A14,755-$A18,584 (Lecturer). Commencing salary according to qualifications and experience.

For further information, including conditions of appointment, superannuation and study leave, write to: Professor Philip Brown, Director, Australian Graduate School of Management, The University of New South Wales, P.O. Box 1, Kensington, N.S.W., Australia 2033.

Applications close 15 September, 1977.

UNIVERSITY OF THE WEST INDIES
TRINIDAD

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in the Department of Zoology which is being established in the Faculty of Science and Agriculture. Preference will be given to candidates with interests in Applied Zoology, e.g. Entomology, Economic Parasitology, Ecology, Fisheries Biology. Salary: Lecturer: TT$12,000 x 1,000 x 15,000 p.a. Assistant Lecturer: TT$15,480-TT$18,816 p.a. (Exchange rate: 1 TT$ = £1 sterling approx.). Gratuity of 20% of F.S.S.U. Unmarried allowance of $1,200 p.a. Housing allowance of $2,000 p.a. Contributory pension scheme. Gratuity on completion of two years' service. Passage for appointment. Study and sabbatical leave. Gratuity on termination. Detailed application, including names and addresses of three referees, should be addressed to the Registrar (Academic), The University of the West Indies, St. Augustine, Trinidad, W.I., by 30 September, 1977, from all applicants.

ABERDEEN
THE UNIVERSITY

DEPARTMENT OF VETERINARY PATHOLOGY

RESEARCH ASSISTANT

Applications are invited for the post of Research Assistant to work on a project entitled "Immunological studies on the immunosuppressive effects of Marek's disease virus in the chicken". The successful applicant will be responsible for helping a senior research worker in the field of tissue culture.

Applicants should possess a university degree in microbiology or biochemistry or equivalent and have a good knowledge of tissue culture techniques.

Salary £2,501 to £3,537 on Research Assistant scale.

Further particulars from the Secretary, Veterinary Pathology, Marischal College, Aberdeen, to whom applications should be addressed by September 2, 1977.

CARDIFF
UNIVERSITY COLLEGE

Applications are invited for the following posts tenable for three years in the first instance. Salary scale £2,501-£3,537 per annum.

Lecturer in Applied Mathematics
Applicants should have a good honours degree in mathematics and be able to teach a wide range of applied mathematics courses.

Lecturer in Pure Mathematics
Applicants should have a good honours degree in mathematics and be able to teach a wide range of pure mathematics courses.

Further particulars may be obtained from the Registrar, University College, Cardiff, to whom applications should be addressed by September 2, 1977.

ABERYSTWYTH
THE UNIVERSITY COLLEGE OF WALES

DEPARTMENT OF AGRICULTURAL ECONOMICS

Agricultural Economists. Invited from GRADUATES in the Department of Agricultural Economics for posts in Business Studies for the post of LECTURER in the above Department, tenable from 1st October, 1977. Salary on scale, £2,501 to £3,537 per annum (subject to review).

Application forms and further particulars are obtainable from the Registrar, Old College, Aberystwyth, to whom duties for applications: 17th August, 1977.

OXFORD
THE UNIVERSITY

PROFESSORSHIP OF THE ROMANCE LANGUAGES

The electors intend to proceed to an election to the Professorship of the Romance Languages which will fall vacant on January 10th, 1978. The stipend of the professorship will be £8,085 a year.

Applications (nine copies) including three referees and full testimonials should be received by noon (Oxford time) on Friday, 30th September, 1977, by the Registrar, University of Oxford, Wellington Square, Oxford OX1 2JD, from whom further particulars may be obtained.

UNIVERSITY OF THE SOUTH PACIFIC—FIJI

Applications are invited for post of

READER/SENIOR LECTURER IN MATHEMATICS (POST 77/41)

tenable from the beginning of 1978.

Applicants should be experienced University teachers with a good record of teaching, research and consultancy. In particular the University is looking for someone who is able to teach over a wide range of the branches of Mathematics at undergraduate level. He/She should also have particular interests in the teaching of Mathematics and in applying mathematics within the variety of problems and projects characteristic of a developing region. The appointee may also be expected to act as Head of the discipline of Mathematics, in time scale: Reader $F12,432 pa. Senior Lecturer $F10,167-$F10,733 pa. (£1 sterling = $F1.571. In addition, the University provides 15 per cent gratuity, superannuation contribution, appointment allowance, family/child accommodation at a maximum rental of 18 per cent of salary. Appointments will be for a contract period of three years and will be renewable by mutual agreement. Candidates should send, quoting ref. reference, three copies of curriculum vitae and the personal particulars and addresses of three referees, to the Registrar, University of the South Pacific, P.O. Box 1168, Suva, Fiji. Applicants resident in the UK should also send 1 copy to Inter-University Council, 36/38 Gordon Square, London WC1H 0PF. Further particulars may be obtained from either address.

UNIVERSITY OF DAR ES SALAAM—TANZANIA

Applications are invited for the post of

SENIOR LECTURER/LECTURER IN ZOOLOGY AND MARINE BIOLOGY

(WILDLIFE ECOLOGY AND MANAGEMENT)

Applicants should possess a PhD with relevant research experience appropriate by published papers. Candidates with an interest in the fields of population ecology and mathematical ecology and with African Wildlife ecologies would be preferred. The appointee will be involved in teaching at undergraduate and postgraduate courses in wildlife and marine biology in the supervision of postgraduate research and to undertake research relevant to the area of specialization. Salary scales: Senior Lecturer TC2,870-TC3,720 p.a. Lecturer TC2,430-TC2,700 p.a. (TC1 = £1.43 sterling). The British Government may supplement salary in range £3,000-£4,310 p.a. (sterling) for married appointees or £2,220-£3,304 p.a. (sterling) for single appointees (normally free of tax). Appointments will be for one and normally renewable annually) and provide student's education allowances and holiday visit passages. FRINGE BENEFITS: Family passages; Housing; Medical care. Applications in duplicate, giving full personal particulars including full names, dates of birth, nationality, marital status, qualifications, experience and publications, and addresses of three referees, should be addressed to the University of London, Appointments Committee, Senate House, London WC1E 7HU, from whom further particulars may be obtained. Please quote reference number 77/1.

BIRMINGHAM
THE UNIVERSITY

FACULTY OF COMMERCE AND SOCIAL SCIENCE
DEPARTMENT OF BUSINESS ADMINISTRATION

RESEARCH ASSISTANT IN THE DEPARTMENT OF BUSINESS ADMINISTRATION GROUP

Applications are invited for a Research Assistant to carry out research in current projects relating to the management of rural development programmes in the United Republic of Tanzania. Now have multivariate and econometric in the study of practice of rural world development.

The appointment will be for one year from 1st October 1977 or from a date to be arranged.

Salary £2,501 per annum plus superannuation.

Applications (three copies) giving three referees by 31st August 1977 to the Assistant Registrar, Personnel, University of Birmingham, P.O. Box 363, Birmingham B15 2TT, from whom further particulars and application forms should be obtained.

Please quote reference CA/6/8/UR.

BRADFORD
THE UNIVERSITY

ASSISTANT GAUGERS AND APPOINTMENTS BUREAU

Applications are invited for the additional post of Assistant Gauger (Ref. 3/77) who have completed a period of training since will be given to men and women in the age bracket 18-25 who have left school with a good general education by holding the Bradford Certificate of Secondary Education or equivalent. Salary in the range £2,353 to £2,761 with superannuation. Commencing date 1st October, 1977 or as soon thereafter as possible for a further year.

Further particulars from the Registrar and Secretary, the University, Bradford, BD7 1DP, to whom applications must be submitted by 31 August 1977. Please quote ref. ES/AGAO/77/E.

ESSEX
THE UNIVERSITY

RESEARCH OFFICER IN THE DEPARTMENT OF SOCIOLOGY

Applications are invited for a one year post of RESEARCH OFFICER (Grade 1A) salary scale £2,094 to £2,365, for analysis of accumulated data manipulated by computer simulation. Familiarity with computer techniques desirable.

Applications (three copies, including ref. LS 88/78/R), including a curriculum vitae and the names and addresses of two referees, should be sent to the Registrar, University of Essex, Wivenhoe Park, Colchester, CO4 3SQ, from whom further particulars are available by 24th August, 1977.

BELFAST COLLEGE
THE UNIVERSITY

ASSISTANT
DEPARTMENT OF BIOLOGY

Applications are invited from Honours Graduates in Biology for the post of Assistant in the Department of Biology. Duties will include teaching laboratory classes in Biology to students in the Biological Sciences and Medical Laboratory Science courses. Applicants should have a good honours degree in Biology and preferably a postgraduate qualification.

Salary scale £2,501 to £3,537 per annum. Superannuation scheme. Commencing salary according to qualifications and experience.

Applications (three copies) with the names of three referees should be sent to the Registrar, Queen's University, Belfast, BT7 1NN, from whom further particulars may be obtained. Closing date for applications: 31st August, 1977.

BIRMINGHAM
UNIVERSITY OF ASTON

RESEARCH FELLOW IN AIR HEALTH, PLANNING AND URBAN STUDIES

FELLOWSHIPS

Applications are invited from suitably qualified candidates for three or four years, on a Senior Research Fellowship or Research Fellowship, which will be tenable in the following areas:

(1) Development of a rapidly expanding Department of Transport Planning and Transportation in the Midlands, involving working and research. Sub-Regional Analysis, Strategic Planning, Transport Planning, Transport Economics, Transport Policy and Management.

(2) Research and teaching in one or more of the following areas:
(a) Building policy formulating agencies in relation to the organization of housing and environmental planning policy.
(b) Economics of urban renewal.
(c) Design with special reference to the development of urban design and local planning policies.
(d) Built form and development control with special reference to the architectural aesthetic problems and the environmental impact of development.
(e) Economics of urban renewal.
(f) Design with special reference to the development of urban design and local planning policies.
(g) Built form and development control with special reference to the architectural aesthetic problems and the environmental impact of development.
(h) Economics of urban renewal.

Applicants should possess a first or second class honours degree in a relevant discipline or have equivalent professional qualifications. Salary £2,501 to £3,537 on Research Fellow scale.

Further particulars from the Secretary, Aston University, Aston Triangle, Birmingham B4 7ET, to whom applications should be addressed by 31st August 1977. Please quote ref. RS/AHUS/77/E.

KEELE
THE UNIVERSITY

DEPARTMENT OF CHEMISTRY

Applications are invited for the post of RESEARCH ASSISTANT in the Department of Chemistry, tenable for one year from 1st October, 1977. Initially for one year, but with the possibility of renewal for a further year. Applicants should hold good honours degree or equivalent qualification and should have a good knowledge of physical chemistry. Salary will be assessed in accordance with the Research Assistant Scale.

Application forms and further particulars from the Registrar and Secretary, the University, Keele, Staffs. ST5 5BG, to whom completed forms should be returned by 31st August, 1977.

LEEDS
THE UNIVERSITY

Faculty of Social Sciences
DEPARTMENT OF PSYCHOLOGY

SECRETARY

Applications are invited for the post of Secretary to the Department of Psychology. Salary scale £2,501 to £3,537 per annum. Previous experience of administration preferred. Superannuation scheme and national insurance.

Applications by September 1st to Professor T. Shallice, Chairman, Department of Psychology, The University, Leeds, LS2 9JT, giving two referees and quoting reference number 3/77.

LONDON
THE UNIVERSITY

GOLDSMITHS' COLLEGE

DEPARTMENT OF BIOLOGICAL SCIENCES

Applications are invited for two temporary posts of Assistant Lecturer in the above Department for the duration of the first year B.Sc. Biology course.

Applicants should have had training and experience in research in biology, preferably in ecology and be able to teach undergraduate biology.

Salary within the range £2,501 to £3,537 per annum, including London Weighting Allowance and superannuation.

Write for further particulars, enclosing a curriculum vitae to Dr. A. Jones, the Personnel Officer, University of London, Goldsmiths' College, New Cross, London, SE14 6NW, to whom applications should be sent by August 26, 1977.

NEW ZEALAND
MASSEY UNIVERSITY
Palmerston North

LECTURER SENIOR LECTURER IN MATHEMATICS

Applications from suitably qualified candidates are invited for the above positions in the Department of Mathematics.

Salary: within the range NZ$6,000 to NZ$24,315.

Further details of the position and of the University appointment and information to be supplied by applicants, may be obtained from the Assistant Registrar (Employing Authority), Massey University, Palmerston North, New Zealand, to whom applications should be addressed by 30 September, 1977.

NEW ZEALAND
MASSEY UNIVERSITY
Palmerston North

CENTRE FOR UNIVERSITY EXTRA-MURAL STUDIES

ULSEMBEJI ULUSEB-ASSISTANT TO THE DIRECTOR

Applications are invited for the position of Ulsembeji Ulseb (Assistant to the Director of External Studies) Massey University has the sole responsibility for extra-mural studies in New Zealand for vocational degree and diploma courses, Adult Education programme, correspondence courses, Agricultural Extension and Farm and Horticulture, Humanities, Science, Social Sciences and Technical Research. Office will be situated in Centre and concerned with all the processes and performance of the service to students, and will also be responsible for the Centre's work with the administrative responsibilities.

Candidates should have had training and experience in research in the social sciences or humanities and some experience in teaching and or administration in tertiary education.

Salary: within the range of NZ$6,000 to NZ$24,315.

Further details of the position and of the University appointment and information to be supplied by applicants, may be obtained from the Assistant Registrar (Employing Authority), Massey University, Palmerston North, New Zealand, to whom applications should be addressed by 30 September, 1977.

NEW ZEALAND
UNIVERSITY OF OTAGO
Dunedin

CHAIR OF PAEDIATRICS AND CHILD HEALTH

The University Council invites applications for a Professorship in the Chair of Paediatrics and Child Health at Dunedin. The successful candidate will join a group of research staff under the direction of Professor J. Gaylor. Candidates should have a medical honours degree, a knowledge of clinical and research work in paediatrics, and a deeper interest in monetary economics and market structures.

Salary in the range $25,353 to $27,761, with superannuation. Possible appointment for one year from 1 October, 1977 or any date thereafter as mutually agreed upon.

Further particulars from the Registrar and Secretary, the University of Otago, Dunedin, New Zealand, to whom applications should be submitted by 31 August, 1977.

SHEFFIELD
THE UNIVERSITY

DIVISION OF ECONOMIC STUDIES

Applications are invited for a Research Assistant to work on a research project on a regional input-output model of the Sheffield City Region. Trading relations will involve the study of the organization of the consumer credit market with a view to assessing how it can be modified under the direction of Professor J. Gaylor. Candidates should have a good honours degree, a knowledge of statistical and mathematical techniques, and a deeper interest in monetary economics and market structures.

Salary in the range £3,353 to £4,761, with superannuation. Possible appointment for one year from 1 October, 1977 or any date thereafter as mutually agreed upon.

Further particulars from the Registrar and Secretary, the University, Sheffield, S10 2TN, to whom applications should be submitted by 31 August, 1977.

THE OPEN UNIVERSITY
FACULTY OF EDUCATIONAL STUDIES

LECTURESHIP

Applications are invited for the post of Lecturer in EDUCATIONAL STUDIES (Ref. 3/77) to work in the Psychology of Education discipline group.

Although no special interest is essential consideration, should possess expertise, background and training in one or more of the following areas: child development, educational psychology, personality theory, classroom research.

The successful candidate will be involved in the preparation of course units which may include Open University Foundation Course, Educational Studies and Mathematics and Science Education.

The post is a permanent one. The successful candidate will be expected to commence his/her duties as soon as possible.

Salary within the range of £2,501 to £3,537 per annum.

Application forms and further particulars are available from the Registrar, Open University, Walton Hall, Milton Keynes MK7 6AA, (Tel.: Milton Keynes 74011). Closing date for applications: 22 August, 1977.

THE OPEN UNIVERSITY

RESEARCH ASSISTANT IN PHILOSOPHY

FACULTY OF ARTS

Applications are invited for a RESEARCH ASSISTANT in PHILOSOPHY in the Faculty of Arts, in the Department of the Open University, Walton Hall, Milton Keynes.

Applicants should hold a post first degree and intend to proceed to a higher degree in philosophy, preferably at that time, normally, at the Open University.

Appointment will be made for one or two years in the first instance with the salary range £2,501 to £3,347 depending on qualifications. Please write for further details to

Professor F. G. Foster,
Department of Statistics,
Trinity College,
Dublin 2

to whom completed applications should be submitted before August 30.

THE OPEN UNIVERSITY
FACULTY OF SCIENCE

SCIENTIFIC SUPPORT OFFICER

Applications are invited for the post of Scientific Support Officer (Ref. 3/77) in the Faculty of Science, to work in the Department of Chemistry.

Applicants should have had training and experience in research in the science laboratory and some experience in teaching and or administration in tertiary education.

Salary within the range £2,501 to £3,537 per annum, including London Weighting Allowance and superannuation.

Write for further particulars, enclosing a curriculum vitae to Dr. A. Jones, the Personnel Officer, The Open University, Walton Hall, Milton Keynes MK7 6AA, (Tel.: Milton Keynes 74011).

Closing date for applications: August 26, 1977.

RHODESIA
THE UNIVERSITY

CHAIR OF CLASSICS

CHAIR OF ENGLISH

Applications are invited for the posts of

PROFESSOR and HEAD of the DEPARTMENT of CLASSICS

PROFESSOR and HEAD of the DEPARTMENT of ENGLISH

Salary scales: Chairs, salaries £11,457 by £627 to £15,574.

Both positions, tenable before July 1, 1978, are for a five-year contract.

Permanent pensionable terms, family passage and allowance towards children's education are important benefits. Initial allowance of up to half of one year's salary, guaranteed, Unfurnished university accommodation, guaranteed for a period of at least three years, for persons accepting long contracts (Rhodesia, Subsidized leave and medical care, Generous travel allowance. Superannuation and medical aid schemes.

Short-term contracts: family passages and allowance towards transport of effects. Assistance with accommodation for persons recruited from outside Rhodesia.

Applications: Six copies, giving full personal particulars including full names, dates of birth, nationalities, qualifications, experience and publications and names and addresses of three referees, should be submitted by Sept. 30, 1977 to Sir Robert Tomlinson, KCMG, Rhodesia House, Strand, London WC2B 5JA, from whom further particulars may be obtained. Degrees particularly desired are a combination of appropriate Honours in the Association of Commonwealth Universities (Abbreviations: Oxon, Cantab, Lond, Edin, Dublin, Belfast, Wales, Manchester, Sydney, Melbourne, Toronto, Dalhousie, McGill, Cape Town, Witwatersrand, Rhodes, Ibadan, Makerere, Nairobi, Malaya, Singapore, Hong Kong, Delhi, Bombay, Calcutta, Madras, Ceylon, Peradeniya, Kingston, Jamaica, Nigeria, Ife, Zaria, Legon, Lagos, Ahmadu Bello, Malawi, Zambia, Botswana, Lesotho, Swaziland, Nairobi, Makerere, Dar es Salaam

Universities continued

AUSTRALIA

Applications are invited for the following posts, for which applications close on the dates shown. SALARIES (unless otherwise stated) are as follows:— Associate Professor/Reader $A25,466; Fellow $A18,742 to $A22,473; Senior Research Fellow $A20,087 to $A23,884; Research Fellow $A14,345 to $A18,764; Senior Lecturer $A19,290 to $A22,505; Lecturer $A14,345 to $A18,984. Further details, conditions of appointment for each post, method of application and application form, where applicable, may be obtained from the Association of Commonwealth Universities (Appointments), 36 Gordon Square, London WC1H 0PF.

Flinders University of South Australia

LECTURER IN ECONOMICS

School of Social Sciences

Applications will be considered from economists with interest in any field of economics.
August 31, 1977.

James Cook University of North Queensland

LECTURER IN ELECTRICAL ENGINEERING

Candidates should have a specialist interest in the area of communications and particularly in antennas and microwaves. The possession of a higher degree and evidence of relevant industrial experience or of fruitful cooperation with industry in the general area of propagation, radiation, antenna design, etc, would be a distinct advantage. The appointee would be required to lecture at all levels and to initiate and support research within the Department.
August 31, 1977.

University of New England Armidale, New South Wales

VISITING POSITION

—Department of Sociology

Applicants will have a major responsibility to lecture to internal and external students on the Sociology of Health and Medicine. Experience is required in lecturing to university undergraduates on the Sociology of Health and Medicine together with appropriate research involvement in the same field. The position will be tenable from mid-July, 1978, to mid-July, 1979. Appointment may be made at the level of Professor, Associate Professor/Reader, or Senior Lecturer, depending on qualifications and experience.

University of Melbourne

SENIOR LECTURER (LIMITED TENURE) /LECTURER (LIMITED TENURE) IN CLINICAL NEUROPSYCHOLOGY (READVERTISED)

Department of Psychology

The Department of Psychology has received a New Development Grant for an initial period of three years to establish a Clinical Neuropsychology Unit for postgraduate research and clinical training in psychological assessment and management of problems associated with cerebral impairment and brain handicaps in adults and children. This unit will be located in one of the teaching hospitals. Staff appointed will play a major part in the teaching and supervision for a two-years Master's Degree by coursework which will form the core of the clinical training programme.
QUALIFICATIONS: A postgraduate qualification together with experience in Clinical Neuropsychology. It is hoped that the successful applicant will be able to take up the appointment as soon as possible.
September 15, 1977.

Australian National University

SENIOR RESEARCH FELLOW/RESEARCH FELLOW: DEPARTMENT OF SOLID STATE PHYSICS

Research School of Physical Sciences

This position will become vacant on January 1, 1978. The Department at present has an academic staff of seven, headed by Professor W. A. Runciman. The principal research interests of the Department are in the experimental and theoretical study of optically active centres in insulating materials, including minerals and magnetically ordered crystals. Experimental techniques include optical, Mössbauer and electron spin resonance spectroscopy.
August 19, 1977.

VISITING FELLOWSHIPS: HUMANITIES RESEARCH CENTRE

Appointment will be for periods of between three and twelve months in 1979. Each year the Centre adopts a theme on which it will concentrate its activity for that year. The theme for 1979 will be Drama. Applications will continue to be accepted however from those working in any field of the Humanities within the Centre's principal area of interest. This embraces European intellectual and cultural traditions and their influence overseas. Visiting Fellows will receive appropriate grants which will be determined in each case in accordance with qualifications and experience and will take account of other financial assistance available to the applicant.
October 17, 1977.

University of Queensland

SENIOR LECTURER/LECTURER IN ORAL BIOLOGY

Department of Dentistry

An applicant must hold a dental degree registrable in Queensland, with teaching and research interests in Oral Pathology and/or Oral Histology. A dental clinical loading of $A2,500 is payable.
October 14, 1977.

LECTURER IN EDUCATION

(Social Educational Curriculum Studies)

Applicants should be able to contribute to curriculum studies in social science and history, and the broad area of social education. Preference will be given to applicants with a higher degree in appropriate educational studies who are able to contribute to courses in other disciplines and who have good teaching experience.
September 12, 1977.

LECTURER IN EDUCATION

(Educational Sociology)

Applicants should have a strong background in Sociology and Education, perhaps with a particular interest in structural approaches, although applications are welcome from people with strengths in other areas.
September 12, 1977.

University of Sydney

LECTURER IN PHILOSOPHY

School of Philosophy

There are two departments of Philosophy in the University. The lecturer appointed will work until further notice under the direction of the Head of the Department of Traditional and Modern Philosophy. This department aims to maintain research and teaching in all branches of the subject, considered as a theoretical discipline. There are at present nine full-time members of staff, with interests in logic, metaphysics, epistemology, philosophy of language, ethics and political philosophy. The appointee to this position will be expected to offer courses in Logic at all levels and to supervise advanced study in the subject. Ability to contribute to the teaching programme in other fields would be a highly desirable additional qualification.
August ...

LECTURER/SENIOR LECTURER IN MECHANICAL ENGINEERING IN FIELD OF INDUSTRIAL ENGINEERING/ MANAGEMENT

Applicants should have a good Honours Degree in Engineering together with significant achievement in postgraduate research or in professional work in industry. Appointee will be expected to teach courses and to supervise theses in some or all of the following subjects: Industrial Organization and Management (live contest), Business Finance, Ergonomics, Operations Research and Production Technology. Appointee will be encouraged to develop further this curriculum and also to work closely with industry. Mature applicants interested in a fixed-term appointment are welcome to apply.
August 22, 1977.

LECTURER IN FRENCH

Candidates should have specialized in one or more of the following fields: literary theory, nineteenth or twentieth century literature, sociology (with special emphasis on French-speaking cultures). French intellectual history (with special emphasis on contemporary issues). Preference will be given to candidates with doctoral qualifications, some tertiary teaching experience and excellence, and a proven ability to promote and supervise postgraduate research.
September 15, 1977.

University of Adelaide

DIRECTOR OF THE ADVISORY CENTRE FOR UNIVERSITY EDUCATION

(Reference 7.3)

which is vacant on the appointment of the present Director who will take up the Directorship of a College of Advanced Education in September, 1977. The University will seek to make an appointment at Senior Lecturer level but may, in certain circumstances, consider the possibility of an appointment at Reader level. The main function of the Centre is to assist academic staff and departments to improve the effectiveness of their teaching. Its programme will be developed in consultation with the Director.
August 31, 1977.

DIRECTOR OF URBAN AND REGIONAL PLANNING STUDIES

(Reference 7.5)

for the postgraduate degree of Master of Urban and Regional Planning. The Director of Studies, who will be responsible to the Board of Studies for Urban and Regional Planning, is expected to provide academic leadership in the teaching and research programme for students taking this degree, and be responsible for the administration and coordination of the course. This appointment will be at the Reader level, and it is expected that applicants for the position will have appropriate academic qualifications and a record of research and publication in fields relevant to urban and regional planning, together with demonstrated professional competence. Experience in working with multi-disciplinary planning groups is desirable.
September 30, 1977.

FELLOWSHIP IN TRANSPORT RESEARCH SOUTH AUSTRALIA

The Government of South Australia is making available in 1978, as part of the Transport Research & Development Programme, a Fellowship for full-time research tenable at the Flinders University of South Australia or the University of Adelaide. The Fellowship, known as the South Australian Government Fellowship for Transport Research, will be awarded by the Director-General of Transport in association with the Universities.

The Fellowship is a post-masters or post-doctoral award for persons who have an interest in transport planning or research. To be eligible for the Fellowship, a candidate must hold at least a Masters degree.

The Fellowship, worth between $14,000 - $18,000 p.a., is tenable for two years in any field of research related to transport subject to the applicant being acceptable to the University concerned.

Further information can be obtained from

The Secretary, Transport Scholarship Committee, Planning Division, Department of Transport, G.P.O. Box 1599, Adelaide, South Australia 5001

to whom applications should be addressed

The letter of application should contain the names and addresses of two referees and state clearly the qualifications, experience and research interest(s) of the applicant.

Closing date for applications is 30th September, 1977.

MOT 14

BIRMINGHAM
THE UNIVERSITY

FACULTY OF COMMERCE AND SOCIAL SCIENCE

INSTITUTE OF LOCAL GOVERNMENT STUDIES

LECTURER IN ACCOUNTING AND MANAGEMENT CONTROL

Applications are invited for a temporary lecturer to contribute to the post-experience teaching programme relating to British Local Government. Opportunities for teaching on postgraduate and undergraduate courses and for developing research interests. Possibility of occasional short-term overseas assignments.

Applicants should have qualifications and experience in one or more of the areas of Accounting, Management Control, Financial Management, Public Finance. Interest in and knowledge of local government essential.

Appointment will be for three years, commencing on 1 October, 1977, or as soon after as possible.

Please quote reference C7 ...

DEPARTMENT OF ACCOUNTING

Arising from the election of Dr. H. C. V. Hovey to the Sir Julian Hodge Chair of Accountancy at UWIST, a vacancy exists for a LECTURER IN ACCOUNTING. Applications are sought from suitably qualified graduates. The successful applicant will be required to take up his or her post from October, 1977, or as soon as possible thereafter. There will be opportunities to develop or extend course material for most topics in accountancy and finance at undergraduate, postgraduate and post-experience levels. On-going research projects will be especially welcomed by the Department.

Please quote reference C7 ...

Salary for both appointments on scale £3,333 to £6,666 per annum (converted to increase in October) plus superannuation.

Applications (three copies) naming three referees by 22nd August, 1977, to the Assistant Registrar (Commerce), University of Birmingham, P.O. Box 363, Birmingham, B15 2TT, from whom further particulars and application forms should be obtained. Please indicate for which post you wish to be considered.

NEW ZEALAND
UNIVERSITY OF CANTERBURY
Christchurch

Applications are invited for the following positions:

LECTURER/SENIOR LECTURER IN CONTINUING EDUCATION

Applicants should possess a higher degree in Adult Education and have had previous teaching experience in that discipline.

Applications close on 30 September, 1977.

LECTURER IN HISTORY

The person appointed should have research experience in New Zealand History and will be required to teach and supervise research in that field. Applicants should indicate whether they have had training in quantitative methodology or in the handling of oral sources.

Applications close on 16 September 1977.

The salary for Lecturers is on a scale from NZ$10,250 to $12,6.. per annum and for Senior Lecturers NZ$12,982 to $14,002 (bar), $15,509 per annum.

Particulars, including information on travel and removal allowances, study leave, housing and superannuation, may be obtained from the Association of Commonwealth Universities (Appts.), 36 Gordon Square, London WC1H 0PF.

CARDIFF
UNIVERSITY COLLEGE

Applications are invited for the post of TUTORIAL FELLOW in the DEPARTMENT OF SOCIOLOGY. Salary £2,... to £3,... Duties to commence 1st October, 1977.

The post is available for a period of three years to enable the holder to pursue a higher degree and, at the same time, to gain experience in undergraduate teaching. Preference will be given to candidates who can teach Sociology of Law and the Social Structure of Modern Britain.

Applications (2 copies), together with the names and addresses of two academic referees, should be forwarded to the Vice-Principal (Administration and Registrar), University College, P.O. Box 78, Cardiff CF1 1XL, by ... of August, 1977. Please quote reference 1405.

ESSEX
THE UNIVERSITY

DEPARTMENT OF GOVERNMENT

TEMPORARY LECTURESHIP

Applications are invited for the post of Temporary Lecturer in the Department of Government, tenable for one year from 1st October 1977. Candidates should be able to teach British Politics or Western European Politics and preference will be given to those with an interest in policy analysis within either of these areas.

Applications (six copies) should be submitted to the Registrar (Ref. ...), University of Essex, Wivenhoe Park, Colchester CO4 3SQ, from whom further particulars of the post are available, by 19th August, 1977.

HERIOT-WATT
THE UNIVERSITY

DEPARTMENT OF BUSINESS ORGANISATION

LECTURER IN INDUSTRIAL SOCIOLOGY

Applications are invited from candidates with an Honours or Higher degree in Industrial Sociology or general Sociology and with industrial or management experience. Previous teaching or related experience and a keen interest in business and management problems will be considered advantages.

The successful candidate will be required to teach at both undergraduate and postgraduate level and there will be opportunities to undertake relevant research.

Further particulars and application forms may be obtained from the Staff Officer, Heriot-Watt University, Chambers Street, Edinburgh EH1 1HX, to whom completed applications should be sent by August 19, 1977.

LANCASTER
THE UNIVERSITY

DEPARTMENT OF BIOLOGICAL SCIENCES

Applications are invited for a temporary LECTURESHIP (one year) in PLANT ECOLOGY. Applicants must have a major interest in British vegetation and be prepared (1) to offer courses in structure and dynamics of terrestrial vegetation, and (2) cooperation with the National Vegetation Classification project, which is coordinated from Lancaster. The person appointed will take up duties as soon as possible.

Further particulars may be obtained (quoting reference ...) from the Establishment Officer, University House, Lancaster LA1 4YW, to whom applications (six copies) naming three referees, should be sent not later than September ..., 1977.

LEEDS
THE UNIVERSITY

DEPARTMENT OF PLANT SCIENCES

Applications are invited for the post of temporary LECTURER in the above department. The appointment will be for one year from October 1977. Qualifications in science and plant biology desirable, but consideration will be given to applicants in other areas of plant science.

Salary on the scale £3,333 to ... for Lecturers.

Forms of application and further particulars may be obtained from the Registrar, The University, Leeds LS2 9JT, quoting reference number ... Completed applications should be returned to ... The University, Leeds LS2 9JT, by September ...

LEICESTER
THE UNIVERSITY

LECTURESHIP IN BIOCHEMISTRY

Applications are invited for a LECTURESHIP in the Department of BIOCHEMISTRY as a consequence of the establishment of the Medical School. Candidates with interest and experience in teaching biochemistry to a medical curriculum will receive special consideration. Excellent research facilities available.

Candidates should be prepared to take up their duties during the 1977-78 session.

Salary according to qualifications and experience on the scale £3,333—£6,655 p.a. with superannuation benefits.

Further particulars and application form from the Registrar to whom completed applications should be sent as soon as possible and not later than October 1, 1977, quoting reference number L8116.

LONDON
THE UNIVERSITY

LONDON SCHOOL OF ECONOMICS

LECTURESHIP IN POLITICAL PHILOSOPHY

Applications are invited for appointment for one year from 1st October, 1977, to a lectureship in Political Philosophy. Candidates should be able to teach Political Philosophy and preferably also the History of Political Thought.

The appointment will be on the salary scale for Lecturers of £3,333 to £6,655 a year plus £312 a year London Allowance and superannuation benefits. In assessing the starting salary, consideration will be given to qualifications, age and experience.

Applications should be received not later than 31st August, 1977, by the Administrative Officer (Room H410), The London School of Economics and Political Science, Houghton Street, London WC2A 2AE, from whom application forms must be obtained.

NEW ZEALAND
MASSEY UNIVERSITY
Palmerston North

SENIOR LECTURER/LECTURER IN BUSINESS LAW

Applications are invited for a SENIOR LECTURESHIP/LECTURESHIP in BUSINESS LAW in the Business Studies Department. Candidates should hold qualifications in and experience of business law, but preference may be given to those with interest and experience in the law of industrial relations, marketing, real estate, financial institutions, or international trade. The appointee will be expected to teach at undergraduate level and in the postgraduate courses in the Faculty of Business.

The successful candidate will join a group of four lawyers responsible for the teaching of a range of business-oriented law papers to students preparing for careers in fields other than law. Opportunities exist for development of courses in the appointee's specialty area and he or she will be encouraged to conduct research.

Appointment will be made at a level appropriate to qualifications and experience on the following scales: Senior Lecturer NZ$12,982 to 14,500; Lecturer NZ$10,250 to 12,6..

Further details of the position, together with conditions of appointment, may be obtained from the Association of Commonwealth Universities (Appts.), 36 Gordon Square, London, WC1H 0PF, or from the Registrar of the University.

Applications close on 14 September, 1977.

READING
THE UNIVERSITY

LECTURESHIP IN ECONOMICS

Applications are invited for a Lectureship in Economics from candidates with a leading or special interest in macroeconomics.

The person appointed should take up duties on 1st October 1977 or as soon as possible thereafter. The appointment will be for a fixed period of one year.

Applications should be addressed to Professor ... Department of Economics, University of Reading, Whiteknights, Reading, giving full details and the names of two or three referees, and should reach him not later than 15th August, 1977.

SALFORD
THE UNIVERSITY

DEPARTMENT OF CIVIL ENGINEERING

LECTURER IN CONSTRUCTION TECHNOLOGY

Applicants should have appropriate qualifications in building or related subject and should have some practical experience of construction methods.

Salary on the scale £3,333—£6,655 per annum. USS.

Further particulars and application forms are obtainable from the Registrar, University of Salford, Salford M5 4WT, to whom completed forms should be returned by August 31, 1977, quoting ref: C/161/THES.

Universities continued

NEWCASTLE UPON TYNE
THE UNIVERSITY

DEPARTMENT OF FINE ART

LECTURER IN PAINTING

Applications are invited for the above post in the Department of Fine Art, which is tenable from October 1st, 1977.

Salary will be at an appropriate point on the Lecturers' scale £3,333 to £6,655 per annum according to age, qualifications and experience. Membership of the appropriate University superannuation scheme will be required.

Further particulars may be obtained from the Registrar, The University, Newcastle upon Tyne NE1 7RU, with whom applications (three copies), together with photographs and/or slides of recent work and the names and addresses of three referees, should be lodged not later than September 2nd, 1977. Please quote reference THES.

RHODESIA
THE UNIVERSITY

CHAIR OF GEOLOGY

Applications are invited for the post of Professor and Head of the Department of Geology which has become vacant on the appointment of Professor G. Bond as Vice-Principal.

Salary Scale: £11,361 by £121 to £13,381 per annum (approx. stg. equiv.).

Both permanent, pensionable terms and short-term one or two-year contracts are offered.

Permanent, Pensionable Terms: Family passages and allowance towards transport of effects on appointment. Installation loan of up to half of one year's salary if required. Unfurnished University accommodation guaranteed for a period of at least three years for persons recruited from outside Rhodesia. Sabbatical Leave and Biennial visits with travel allowances. Superannuation and medical aid schemes.

Short-term contracts: Family passages and allowance towards transport of effects. Assistance with accommodation for persons recruited from outside Rhodesia.

Applications: 16 copies, giving full personal particulars (including full name, place and date of birth, etc.), qualifications, experience and publications and names and addresses of three referees should be submitted by 31 August, 1977, to the Assistant Registrar (Science), University of Rhodesia, P.O. Box MP 167, Mount Pleasant, Salisbury, Rhodesia, from whom further particulars may be obtained. Overseas applicants please send a copy of their applications to the Association of Commonwealth Universities (Appts.), 36 Gordon Square, London WC1H 0PF, from whom conditions of appointment may be obtained.

British subjects considering applying for posts in Rhodesia are urged to consult the Foreign and Commonwealth Office (telephone 233 4143) or their nearest British Consular office.

RHODESIA
THE UNIVERSITY

CHAIR OF COMPUTER SCIENCE

Applications are invited for the Chair and Headship of the recently established Department of Computer Science in the Faculty of Science.

Salary Scale: £11,110 by £126 to £13,541 per annum (approx. stg. equiv.).

Both permanent pensionable terms and short-term one or two-year contracts are offered.

Permanent, Pensionable Terms: Family passages and allowance towards transport of effects on appointment. Installation loan of up to half of one year's salary if required. Unfurnished University accommodation guaranteed for a period of at least three years for persons recruited from outside Rhodesia. Sabbatical leave and Biennial visits with travel allowances. Superannuation and medical aid schemes.

Short-term Contracts: Family passage and allowance towards transport of effects. Assistance with accommodation for persons recruited from outside Rhodesia.

Applications: 16 copies, giving full details of personal particulars, qualifications, experience, research publications, together with the names and addresses of three referees should be sent by August 31, 1977, to the Assistant Registrar (Science), P.O. Box MP 167, Mount Pleasant, Salisbury, Rhodesia, from whom further particulars may be obtained. Applicants from outside Southern Africa should send an additional copy to the Association of Commonwealth Universities (Appts.), 36 Gordon Square, London, WC1H 0PF, from whom further particulars are also available.

British subjects considering applying for posts in Rhodesia are urged to consult the Foreign and Commonwealth Office (telephone 233 4143) or their nearest British Consular office.

STIRLING
THE UNIVERSITY

MACROBERT ART CENTRE

Applications are invited for the post of BUSINESS MANAGER.

Duties include financial management, statistical records, liaison with grant-aided bodies, overseeing the day-to-day non-technical work of the centre. The post also carries responsibility for acting as Administrator of Stirling Film Theatre, which is housed at the MacRobert Centre.

Starting salary at a point to £5,765 to £6,647 with superannuation.

Further particulars may be obtained from the Director, MacRobert Art Centre, University of Stirling, Stirling, to whom applications should be sent by 30th August, 1977.

SHEFFIELD
THE UNIVERSITY

DEPARTMENT OF SOCIOLOGICAL STUDIES

Applications are invited for a temporary LECTURESHIP in the SOCIOLOGY OF DEVELOPING COUNTRIES, for one year from 1st October, 1977. Preference will be given to candidates with knowledge of theories of imperialism and economic dependence. Salary in the range £3,333 to £4,007 a year.

Further particulars from the Registrar and Secretary, The University, Sheffield S10 2TN, to whom applications (five copies) should be sent by 22nd August 1977. Quote Ref.: R/11/D.

SOUTHAMPTON
THE UNIVERSITY

COMMUNITY MEDICINE

Applications are invited for three Research posts each of up to three years' duration to evaluate various aspects of cancer care in Wessex:

(a) RESEARCH FELLOW, to act as team leader and to study the effectiveness of health education in the cancer field. Ref.: 312/H.

(b) RESEARCH ASSISTANT, to evaluate information systems relating to cancer morbidity—in particular the Regional Cancer Registry. Ref.: 313/H.

(c) RESEARCH ASSISTANT, to evaluate the care received by cancer patients and their relatives in the community. Ref.: 314/H.

Salary range: Research Fellow: £3,333-£5,0.., Research Assistant: £2,913-£4,196.

Enquiries will be welcomed from candidates with a wide variety of backgrounds, viz operational research, health education, information systems, behavioural science, psychology, etc. Car ownership an advantage.

In addition to their research programmes, staff will be expected to participate in the general activities of the Department, which is based at Southampton General Hospital.

Further particulars may be obtained from Mr. I. W. E. Swann, The University, Southampton SO9 5NH, to whom all applications must be sent not later than Thursday, 31 August, 1977. Please quote appropriate reference number THES.

SUSSEX
THE UNIVERSITY

EAST SUSSEX ACCOUNTABILITY PROJECT

The University of Sussex in association with the East Sussex Education Committee propose to appoint

TWO JUNIOR RESEARCH FELLOWS

on 2-year temporary contracts under an SSRC grant to study the possibilities of School-based Accountability procedures, including problems of communication with lay audiences.

The appointments will run from October 1, 1977, and will be based in the University of Sussex Education Area. The available funds allow for appointments within the range £3,333—£3,7.. per annum on Range 1A of the Research and Analogous faculty salary scale. Candidates with academic training and some previous research experience in the Social Sciences will be preferred.

Further particulars and application forms, returnable by August 26, 1977, available from the Establishment Section, Office of Arts and Social Studies, Arts Building, University of Sussex, Brighton BN1 9QN. (Brighton 66755, Ext. 1050, Mrs Hutchinson). Quote ref.: 301/3.

SOUTHAMPTON
THE UNIVERSITY

DEPARTMENT OF AERONAUTICS AND ASTRONAUTICS

LECTURESHIP IN FLIGHT DYNAMICS

Applications are invited for the post of Lecturer in the Department of Aeronautics and Astronautics. Candidates should have a good honours degree and preferably industrial and/or research experience in Flight Dynamics. The successful candidate will be expected to research and lecture to undergraduate and postgraduate students in the above field with applications to both rotor and fixed wing aircraft. An interest in space flight dynamics would also be desirable.

Salary scale £3,333-£6,655 per annum. The initial salary will depend on qualifications and experience.

Further details may be obtained from D. A. S. Copland, The University, Southampton SO9 5NH, to whom applications (... copies from United Kingdom applicants) should be sent not later than 9 September. Please quote reference 270/A/THES.

SOUTHAMPTON
THE UNIVERSITY

DEPARTMENT OF ELECTRICAL ENGINEERING

PIRELLI LECTURESHIP

Applications are invited for a temporary Lectureship in the Department of Electrical Engineering. This post is sponsored by Pirelli General Cable Works for an initial 3½ year period. Candidates should have an interest in computational aspects of power systems, including power cables. The successful applicant will be expected to take a full part in the teaching activities of the department, as well as pursuing research in his special field. High academic qualifications and industrial experience are desirable.

Salary scale: £3,333 x £314 (11)—£6,655. The initial salary will depend on qualifications and experience.

Further particulars may be obtained from D. A. S. Copland, The University, Southampton SO9 5NH to whom applications (seven copies from United Kingdom applicants) should be sent not later than 31st August, 1977. Please quote reference No: 284/A/THES.

Fellowships and Studentships

LANCASTER
THE UNIVERSITY

DEPARTMENT OF CHEMISTRY

POSTDOCTORAL RESEARCH FELLOWSHIP

An SRC Postdoctoral Fellowship is available from 1st October 1977 for work with Dr. P. Hodge on the synthesis of naturally occurring quinones with anti-tumour activity.

The appointment will be for one year in the first instance and is renewable for a second year. Salary in range £3,333 to £3,517 per annum plus U.S.S. benefits.

Applications, giving the names of two referees, should be made as soon as possible to Dr. P. Hodge, Chemistry Department, University of Lancaster, Bailrigg, Lancaster, LA1 4YA.

DURHAM
THE UNIVERSITY

ADDISON WHEELER FELLOWSHIP

Applications are invited for one Addison Wheeler Fellowship tenable for three years from October 1977 or as soon thereafter as possible by arrangement and renewable for a further two years. The Fellowships were established to encourage ... advanced knowledge of Man and his physical and ... so as to enable him to make better use of his life here on earth ... It is assumed that candidates will normally be working in the Sciences but candidates working in other fields who feel that their research meets the aims of the Wheeler Fellowships are encouraged to apply.

Salary on the scale £3,761 to £5,1.. per annum plus superannuation benefits. The initial appointment will be made at a level higher than £3,8... Candidates must be under 30 years of age at the time of taking up the Fellowship.

Applications (three copies), naming three referees, should be sent by 31st August, 1977, to the Registrar and Secretary, Old Shire Hall, Durham DH1 3HP, from whom further particulars may be obtained.

Polytechnics

ULSTER COLLEGE

THE NORTHERN IRELAND POLYTECHNIC

Faculty of Business Administration
School of Hotel Catering and Institutional Management

SENIOR LECTURER OR LECTURER II OR LECTURER I
CATERING ADMINISTRATION

For the planning, organizing and control of catering and accommodation operations

SENIOR LECTURER OR LECTURER II OR LECTURER I
CATERING OPERATIONS

With particular reference to food production

Applicants for these posts should have relevant academic qualifications and/or suitable industrial experience in the commercial, non-commercial or welfare sectors of the industry.

Salary Scales: Senior Lecturer: £5,523 to £6,447/£6,909
Lecturer II: £3,744 to £5,985
Lecturer I: £2,913 to £4,860

Above scales inclusive of all supplements.

The Polytechnic is a direct grant institution with an independent Board of Governors. It opened in 1971 and now has a student population of some 6,100. It has extensive new purpose-built accommodation, including 750 residential places on the 114-acre campus overlooking the sea at Jordanstown, a pleasant and quiet residential area. There is a scheme of assistance with removal.

Further particulars and application forms which must be returned by August 26 may be obtained by telephoning Whiteabbey (0231) 65131, extension 2243, or by writing to The Establishment Officer, Ulster College, The Northern Ireland Polytechnic, Shore Road, Newtownabbey, co Antrim BT37 0QB.

POLYTECHNIC OF THE SOUTH BANK

Head of Department of ESTATE MANAGEMENT

Applications are invited for this vacancy, which arises from a promotion. The post is graded as Head of Department Grade VI.

Salary within the range £6,680-£9,495, inclusive of Inner London allowance.

Further particulars and application forms from the Staffing Officer (Room 1036), Polytechnic of the South Bank, Borough Road, London SE1 0AA. Tel. 01-928 8989.

THE POLYTECHNIC HUDDERSFIELD

Department of Computer Studies and Mathematics

RESEARCH ASSISTANT

ACA/153

Applications are invited from persons with appropriate qualifications for the post of Research Assistant in Mathematics. The successful candidate will be expected to study for a CNAA higher degree by research in relativity.

Salary £2,913 per annum

Further details and application forms, which should be returned by 19 August 1977, from the Establishment Office, The Polytechnic, Queensgate, Huddersfield, HD1 3DH (telephone 0484 22288 Ext. 2228).

LEICESTER
THE POLYTECHNIC

SCHOOL OF ARCHITECTURE

LR/SENIOR LECTURER IN ARCHITECTURE

Professor Ron Farmer is seeking an Architect who has had approximately five years of significant practice with a committed interest in part-time education for architects and who would like to join the team of architects/teachers, staffing the new part-time Diploma Course. The central task will be to set up and operate a system of monitoring the office-based component of the part-time students' education and to make sure that that relates sensibly to the course as a whole.

Applicants should be Architects with a degree or equivalent qualification of a School of Architecture recognized by the R.I.B.A.

Salary: £3,744 to £5,447 bar, to £6,909 per annum, inclusive of supplements. Commencing point dependent upon qualifications and experience.

Further details and application form available from Staffing Officer, Leicester Polytechnic, P.O. Box 143, Leicester LE1 9BH.

ULSTER COLLEGE
THE NORTHERN IRELAND POLYTECHNIC

FACULTY OF THE ARTS

LECTURER II – Textile Chemistry

Applicants should have experience either in industry and/or teaching and possess a good degree in Textile Chemistry. The person appointed will be expected to teach the subject to a suitable level to BA(Hons) students of Textile Design, and to take control and oversight of laboratories, dark-rooms and print shop, working as part of a team of design staff.

FACULTY OF BUSINESS ADMINISTRATION

LECTURER I or LECTURER II – Management Accountancy

Additional lecturers are required to join the accounting team following the establishment of a BA(Hons) Degree in Accounting and the continued expansion of Accounting, Banking and Finance courses.

Applicants should have an Honours Degree and/or be a qualified ACMA/ACA/ACCA with an enthusiasm for teaching.

FACULTY OF SCIENCE

LECTURER II – Statistics

To teach Statistics, Operational Research, and associated topics to students on HND, Degree and Professional Courses and to assist in the development of courses in Statistics at all levels.

Applicants should have a good Honours Degree; Industrial, commercial or Civil Service experience would be an advantage.

FACULTY OF SOCIAL AND HEALTH SCIENCES

LECTURER II or SENIOR LECTURER – Social Work

Applicants should be professionally qualified and experienced social workers with experience in field work teaching or in-service training. The successful applicant would become a member of a team of professionally qualified staff and would be enabled to make a significant contribution to theory and practice of a range of social work courses at Degree and Certificate levels.

FACULTY OF TECHNOLOGY

LECTURER II or SENIOR LECTURER – Quantity Surveying

Applications are invited from Chartered Quantity Surveyors or holders of equivalent degree or professional qualifications, to lecture to the professional diploma courses in the primary surveying disciplines.

Starting salary on the LII/SL scale will depend upon the qualifications and experience offered.

LECTURER II or SENIOR LECTURER – Land Use Planning/Estate Management

Applications are invited from Chartered Surveyors, Chartered Town Planners or holders of equivalent degree or professional qualifications to lecture in estate management, planning and allied subjects in the School of Surveying to both higher technician and professional exempting diploma courses.

Salary Scales:
Senior Lecturer—£5,523-£6,447/£6,909
Lecturer II —£3,744-£5,985
Lecturer I —£2,913-£4,869

Above scales inclusive of all supplements.

The Polytechnic is a direct grant institution with an independent Board of Governors. It opened in 1971 and now has a student population of some 6,100. It has extensive new purpose built accommodation, including 750 residential places on the 114 acre campus overlooking the sea at Jordanstown, a pleasant and quiet residential area. There is a scheme of assistance with removal.

Further particulars and application forms which must be returned by August 26 may be obtained by telephoning Whiteabbey (0231) 65131 or by writing to: The Establishment Officer, Ulster College, The Northern Ireland Polytechnic, Shore Road, Newtownabbey, Co. Antrim BT37 0QB.

CENTRAL LONDON
THE POLYTECHNIC

SCHOOL OF LAW

SENIOR LECTURER/ LECTURER II

Appointment is offered at the above post to candidates with a special interest in one or more of the following subjects: Constitutional Law, Tort, and other "core" subjects. Interviews will be held in September, 1977.

Salary: Senior Lecturer £5,925 to £6,849 (bar) to £7,311 includes £402 London Allowance and supplement of £102, subject to formal approval. Lecturer II £4,146 to £6,387 includes £402 London Allowance and supplement of between £444 and £493, subject to formal approval.

Details and application form from the Establishment Officer, PCL, 309 Regent Street, London W1R 8AL. 01-580 2020, Ext. 212. Closing date 19 August, 1977.

PORTSMOUTH
THE POLYTECHNIC

LECTURER GRADE II/ SENIOR LECTURER IN ACCOUNTING

GRADUATE required, preferably with recognized accountancy qualification and/or a relevant master's degree.

Specialist interest in international accounting and finance, or quantitative methods, an advantage.

Salary scale: £3,744 to £5,985 (efficiency bar) to £6,909 per annum.

Application forms and further particulars may be obtained from the Staff Officer, Portsmouth Polytechnic, Alexandra House, Museum Road, Portsmouth, PO1 2QQ, to whom completed applications should be returned by 19th August, 1977. Please quote Ref. C01.

Polytechnics continued

PLYMOUTH POLYTECHNIC

Learning Resources Centre

RESEARCH ASSISTANT

for

TARGET PROJECT

The person appointed will be associated with the TARGET Project (Teaching Appraisal by Repertory Grid Elicitation Techniques) and, in particular, with an investigation of attitudes to academic disciplines as predictors of students' preferences of pedagogic styles. Applicants should have a good degree in a relevant subject, a positive interest in the improvement of teaching efficiency, a Certificate in Education and some teaching experience in the PE/HE sector.

Research Assistants are normally required to register for a higher degree, although post-doctoral applicants will be considered. Appointments are for a period of two years with a possibility of a third year (Fixed term contracts). Salary will be £2,469 for post-graduates or £2,721 post-doctoral (or equivalent) with annual increases of £126. Supplements of £312 p.a. and £132 p.a. will also be paid. Application forms to be returned by 26th August 1977 can be obtained with further particulars from the Personnel Officer.

PLYMOUTH POLYTECHNIC DRAKE CIRCUS PLYMOUTH PL4 8AA

PLYMOUTH POLYTECHNIC

School of Environmental Sciences

RESEARCH ASSISTANT

REACTIVITY OF METAL SULPHIDE MIXES

In collaboration with Imperial Smelting Processes Limited, Avonmouth.

Candidates should be good honours graduates with an interest in the appropriate area.

Research Assistants are normally required to register for a higher degree, although post-doctoral applicants will be considered. Appointments are for a period of two years with a possibility of a third year (Fixed term contracts). Salary will be £2,469 for post-graduates or £2,721 post-doctoral (or equivalent) with annual increases of £126. Supplements of £312 p.a. and £132 p.a. will also be paid.

Application forms to be returned by 26th August 1977 can be obtained with further particulars from the Personnel Officer.

PLYMOUTH POLYTECHNIC DRAKE CIRCUS PLYMOUTH PL4 8AA

Part-time Instrumental Teachers

for

- Flute
- Oboe
- Horn
- Violin

to share in the teaching of music courses, including the BA and BA Honours in Performance Arts.

Fee: £5.79 an hour (under review).

Written applications to: Marjorie Glynne-Jones, Music Chairman (Ref. A353S), Middlesex Polytechnic, Trent Park, Cockfosters, Herts. EN4 0PT, to arrive not later than 31 August.

Middlesex Polytechnic

SHEFFIELD CITY THE POLYTECHNIC

DEPARTMENT OF CHEMISTRY

RESEARCH ASSISTANT IN CHEMISTRY

Applications are invited for the post of postgraduate Research Assistant. The Assistant will synthesize and study the properties and reactions of some [illegible] and [illegible], with a view to identifying compounds of these types of [illegible] potential.

Applicants should have a good honours degree or its equivalent. The post is tenable for three years. Salary will be £2,[illegible] in the first instance, rising to £[illegible].

Closing date: September 2nd, 1977.

DEPARTMENT OF MANAGEMENT STUDIES

RESEARCH ASSISTANT IN PRODUCTION JOB DESIGN

Applications are invited for a Postgraduate Research Assistant to conduct an investigation into the management decision process with respect to Work Organization in the Production [illegible] decision. The person appointed would be expected to register for a higher degree.

This appointment is for two year with the possibility of a third year.

Salary: Scale £2,[illegible] to £3,[illegible].

Closing date: August 19th, 1977.

Requests for application forms and further details, in writing only please, to the Personnel Officer (Dept. THES), Sheffield City Polytechnic, Halfords House, Fitzalan Square, Sheffield, S1 2BB.

LEICESTER THE POLYTECHNIC

SCHOOL OF ARCHITECTURE

LECTURER II/SENIOR LECTURER IN LANDSCAPE ARCHITECTURE

Professor [illegible] is seeking a Landscape Architect, preferably also qualified as an Architect, to join the School of Architecture staff to teach at undergraduate, postgraduate and mid-career levels.

Applicants should hold a Degree or Diploma in Landscape Architecture with approximately five years of practical experience and/or Associate Membership of the Institute of Landscape Architects.

Salary: £3,711 to £6,147 [illegible] supplements. Commencing point depends upon qualifications and experience.

Further details and application form available from Staffing Officer, Leicester Polytechnic, P.O. Box 143, Leicester, LE1 9BH.

Colleges of Education

LONDON INNER LONDON EDUCATION AUTHORITY

PHILIPPA FAWCETT AND FURZEDOWN COLLEGE OF EDUCATION

Tooting Court Road, London SW16 [illegible]

Applications are invited from candidates with appropriate qualifications and experience for one year temporary posts from September 1977.

(1) Full-time LECTURER II in EDUCATION STUDIES.

Candidates should have experience of either Primary or Secondary school teaching. Qualifications in educational psychology would be an advantage but applicants with other specialist interests will be considered.

(2) Part-time (0.5) LECTURER II in ENGLISH.

Candidates should have teaching experience and interest in teaching some aspect of the course related to drama, the mass media and creative writing in addition to the teaching of literature at certificate and undergraduate levels.

(3) Part-time (0.6) LECTURER II in SOCIOLOGY.

Candidates should be qualified to teach general theory and some substantive areas at both certificate and undergraduate levels. Recent teaching experience in schools would be an advantage.

Application forms and further particulars are available from the Academic Registrar. Completed forms should be returned to The Principal within ten days of the appearance of this advertisement.

Colleges of Higher Education

BIRMINGHAM THE QUEEN'S COLLEGE

This ecumenical theological college intends to fill a staff vacancy by appointing from January, 1978, or as soon as possible thereafter, a LECTURER with responsibility for teaching THEOLOGY to university standard, particularly the Bible and/or doctrine. Additional expertise, e.g. in other religions, will be an advantage. The Lecturer must be able to share in the guidance of ordinands and their families.

Applicants may be of any denomination, though it is likely that an Anglican with some years ordained experience in the 30—45 age range will be appointed. Salary around £2,750 plus accommodation and allowances.

Applications should be received by 30 September, 1977, with the names of three referees. Application forms and further details available from the Principal's secretary, The Queen's College, Somerset Road, Edgbaston, Birmingham B15 2QH. Telephone 021-454 1527.

LEICESTER THE POLYTECHNIC

SCHOOL OF PHYSICAL EDUCATION

Applications invited for the following posts:

TWO TEMPORARY LECTURERS

TWO LECTURERS required for one year from September, 1977. Applicants should hold a recognized qualification in Physical Education and/or Recreation. The ability to offer some aspect of Academic study in Physical Education desirable.

Salary will be according to qualifications and experience within the range £[illegible] to £[illegible] per annum, inclusive of supplements.

Further details and application form available from Staffing Officer, Leicester Polytechnic, P.O. Box 143, Leicester LE1 9BH.

Colleges and Institutes of Higher Education

THE NATIONAL INSTITUTE FOR HIGHER EDUCATION IRELAND

Applications are invited for new posts in the Business Studies Department of the Institute. Existing courses lead to the award of honours and general degrees and National Diplomas (NCEA). Postgraduate work will commence shortly. Areas of specialisation include management systems, personnel management, marketing, banking, accounting, international business and office administration.

Business experience is desirable and the minimum academic qualification is an honours degree.

ADMINISTRATIVE SYSTEMS: SENIOR LECTURER

This senior appointment will carry responsibility for academic planning and operation in addition to teaching and research. A high level of understanding of systems applications in the business environment is required, with particular emphasis on office administration and data processing.

ACCOUNTING: LECTURER

Initial responsibility will be for teaching either financial or management accounting up to honours degree level, and including the National Diploma in Business Studies of the NCEA.

INDUSTRIAL RELATIONS: LECTURER

The person appointed will probably be a member of the IPM and should have spent a number of years in industrial relations. Experience of teaching mature students will be an advantage, as also will research/special interests in two or more of the following areas. Legal aspects of industrial relations, labour economics, industrial relations in the EEC and industrial relations procedure.

PSYCHOLOGY: LECTURER

Candidates should have expertise in applications of psychology within business and industry, with special reference to manufacturing and personnel management. An interest in such fields as cybernetics, psychometrics and skills analysis would be an advantage.

MARKETING: ASSISTANT LECTURER

The person appointed will be responsible initially for teaching modules such as marketing research, channel management, sales management and international marketing and will contribute to other programmes in business policy and international business.

SALARY:

Senior Lecturer	£6,449-£8,007
Lecturer	£5,856-£7,234
Assistant Lecturer	£4,292-£5,381

Plus £100 p.a./marriage and £70 p.a./child allowances together with other benefits.

Application material available from the Personnel Office, The National Institute for Higher Education, Limerick, to be completed and returned by Friday 9 September 1977.

Colleges and Institutes of Technology

BOLTON INSTITUTE OF TECHNOLOGY

Department of Management and Business Studies

SENIOR LECTURER IN ACCOUNTANCY

Applicants must be professionally qualified, with good business background and preferably teaching experience on advanced level courses.

Salary scale: £5,314-£6,267 (bar) to £6,729 p.a. plus supplement of up to £180 p.a.

Application forms and further details from the Vice-Principal, Bolton Institute of Technology, Deane Road, Bolton BL3 5AB, to whom completed applications should be returned by 22nd August, 1977.

Administration

BIRMINGHAM THE UNIVERSITY

ESTATES AND BUILDINGS OFFICE

AN ADMINISTRATIVE ASSISTANT is required to work on problems of accommodation allocation in all types of University buildings and to assist with other estate management matters.

Salary scale £3,904-£5,[illegible] p.a. with superannuation.

Particulars and application form obtainable from the Senior Assistant Secretary, University of Birmingham, P.O. Box 363, Birmingham B15 2TT. Closing date August 20.

COMMITTEE OF DIRECTORS OF POLYTECHNICS

ADMINISTRATIVE ASSISTANT

GRADUATE, preferably with office/committee experience and a good understanding of the higher educational system, required by small and busy Secretariat to service committees, survey educational practices, prepare publications and undertake varied informational activities. Initial salary in range £3,000-£3,500 according to age and experience.

Apply by letter with curriculum vitae, names of two referees and your telephone number, to The Secretary (AA), The Committee of Directors of Polytechnics, 309 Regent Street, London W1R 7PE, by August 15, 1977.

Librarians

ABERDEEN THE UNIVERSITY

ASSISTANT LIBRARIANS

Applications are invited for posts as Subject Specialists in the University Library. Preference will be given to experienced candidates with bibliographical knowledge of one or more of the following areas: Social Sciences, Modern Languages, or Humanities.

Salary on Grade IA scale £3,[illegible] to £5,627 per annum, with appropriate placing.

Candidates should possess a good honours degree and professional qualifications.

Further particulars from the Secretary, The University, Aberdeen, with whom applications (2 copies) should be lodged by 26 August 1977.

LONDON

LIBRARIAN required for Jews' College, must be fluent in English and Hebrew, also Judaica.

Salary—Pelham Scale according to qualification.

Apply Executive Director, Jews' College, 11 Montagu Place, London, W.1.

Research

BRADFORD THE UNIVERSITY

POSTGRADUATE SCHOOL OF STUDIES IN RESEARCH IN EDUCATION

Applications are invited from good honours graduates in psychology/education/social anthropology, or in a relevant social science for the post of RESEARCH ASSISTANT for one year in the first instance from October 1977. The project, financed by the Leverhulme Trust, is concerned with problems of vocational adaptation of Asian immigrants, with special reference to the role of the school. Knowledge of Asian culture an advantage. Salary within scale £2,604 to £4,[illegible] per annum.

Further details/Application forms from the Registrar, Ref. RU/HA/LT, University of Bradford, West Yorkshire BD7 1DP. Closing date 10th August, 1977.

LEEDS THE UNIVERSITY

DEPARTMENT OF PHYSICAL CHEMISTRY

Applications are invited for the post of RESEARCH ASSISTANT to join a team using NMR spectroscopy to study the interactions determining the structural disorder, fluidity and solution properties of lipid bilayers. The successful applicant will be engaged in the synthesis of isotopically labelled samples and assisting with NMR measurements. He/she may have the opportunity to register for a higher degree on a part-time basis. Candidates should have an honours degree or its equivalent in Chemistry.

The appointment is for up to two years with an initial salary on the scale £2,904 to £3,[illegible] according to age and qualifications.

Applications with curriculum vitae and the names of two referees should be sent to Dr. N. Boden, Department of Physical Chemistry, University of Leeds, Leeds LS2 9JT.

RESEARCH FELLOW

Required to undertake a study of the ENVIRONMENTAL CONSEQUENCES OF POLLUTION CONTROL

This one-year study is to be financed by the Department of the Environment and undertaken by Trent Polytechnic in conjunction with the University of Bath. Candidates, who should preferably have previous industrial or research experience, may have a background in chemistry, chemical engineering or economics. The appointment will be effective from 1 October, 1977.

Salary according to age and qualifications up to £3,600 per annum.

Further particulars and form of application may be obtained from The Chief Administrative Officer, Trent Polytechnic, Burton Street, Nottingham NG1 4BU. Closing date 20 August, 1977.

TRENT POLYTECHNIC NOTTINGHAM

THE LIBRARY ASSOCIATION

RESEARCH OFFICER FOR COMMUNITY INFORMATION SERVICES

This appointment, funded by the British Library Research and Development Department for three years, is intended to meet the pressing need for an information focus in the field of community information services. The appointee will be in a position to help coordinate and develop policy, practice and research.

Applicants should preferably have qualifications and experience in library information work, including running an information service and qualifications in sociology or social psychology, but other suitably experienced people will be considered. Salary within scale £4,[illegible] to £5,[illegible] per annum.

Further information from the Development Secretary, The Library Association, 7 Ridgmount Street, London WC1E 7AE. Closing date 2nd September.

MANCHESTER THE UNIVERSITY

RESEARCH ASSISTANT IN AGRICULTURAL ECONOMICS

Applications invited for two-year post to assist in econometric study of the [illegible] within the E.E.C. Training in econometric analysis [illegible]. Knowledge of the dairy industry an advantage. [illegible]

Salary range p.a. £2,[illegible]-£3,119. Superannuation.

Particulars and application forms (returnable by Aug. 12) from the Registrar, The University, Manchester M13 9PL. Quote ref.: 151/77/DES.

Appointments Wanted

MALE PHILOSOPHY GRADUATE

1st class honours [illegible] studying PhD, aged 32, who is a qualified teacher with experience at all levels, seeks interesting opportunity which will utilize his abilities.—Box [illegible] V, The Times, E.C.[illegible]

Colleges and Departments of Art

NATIONAL COLLEGE OF ART AND DESIGN
KILDARE STREET, DUBLIN 2

The college has the following vacancy on the academic staff.

ASSISTANT LECTURER IN FINE PRINTS

Salary will be negotiable in the following scale:

ASSISTANT LECTURER:
Single £4,393 by 9 to £5,601
Married £4,474 by 9 to £6,273

Further details and application forms from:

The Registrar,
National College of Art and Design,
Kildare Street, Dublin 2. Ireland.
Closing date: Friday 2nd September, 1977.

NORTH YORKSHIRE COUNTY COUNCIL

HARROGATE COLLEGE OF ARTS AND ADULT STUDIES

2 Victoria Avenue, Harrogate HG1 1EL.

Tel.: Harrogate 62116.

DEPARTMENT OF VISUAL ARTS

Applications are invited for two Technical Assistants to commence duties on the 1st September, 1977 or as soon as possible thereafter.

SILKSCREEN, PHOTOGRAPHY AND PRINTMAKING

Applicants will have a Visual Communications, Printmaking background and qualification. They will have obtained a high level of technical and organisational ability. Duties will include running an expanding silkscreen printing section, assisting in general printmaking, etching and litho and in a small typographic service unit.

CERAMICS

Applicants will hold a good qualification and experience in both studio and industrial ceramics. They will have creative flair as well as being conversant with technical ceramics technology. Duties will involve considerable responsibilities within the day to day running of a busy and expanding department.

Both appointments require applicants to be both up to date in outlook and sympathetic to the needs of a wide variety of students.

Salary scale Technician 4 + 1 non-graduate: £3,[illegible] including supplement.

Application forms and further details from the Principal, Harrogate College of Arts and Adult Studies, 2 Victoria Avenue, Harrogate HG1 1EL (phone Harrogate 62116), to whom forms should be returned on or before 25th August, 1977.

General Vacancies

LONDON

SOCIAL SCIENCES

£4,650-£6,245

The Social Science Research Council is a Government funded organisation operating under Royal Charter, which supports and carries out research in the Social Sciences.

The Council, whose headquarters staff of [illegible] engaged in administering [illegible], two vacancies for [illegible] to [illegible] Secretariat.

1. SECRETARY to the Economic and Social Affairs Committee and Steering Committee.

2. SECRETARY to the Political Science and International Relations Committee and Law Committee.

The successful candidates should be at least 27 years of age and have a good honours degree in a relevant subject.

A postgraduate qualification and/or experience of research would be an advantage.

The salary scale is £4,650-£6,245 p.a. (including London Weighting plus £[illegible] Pay Supplement). Starting salary may be above the minimum depending on experience and qualifications. The hours of duty are 36 per week excluding lunch and there is an annual leave entitlement of [illegible] days holiday plus [illegible] days privilege holiday. The Council has its own non-contributory pension scheme.

Please write for application forms and job description to Mrs. Anna [illegible] (Ref. [illegible]), SSRC, 1 Temple Avenue, London EC4Y 0BD. Closing date 19 August, 1977.

Overseas

Nursery School Teachers' College
Sydney, Australia

A College of Advanced Education

PRINCIPAL LECTURER
EARLY CHILDHOOD STUDIES

The College, established in 1932, is a small single-purpose college, housed in modern premises and offering all facilities for innovative teacher education programmes. Students are prepared for the teaching of children aged 2-8 years.

Applications are invited for appointment to the above-mentioned position.

The College seeks the services of a person with high academic qualifications and extensive teaching experience in the area of Early Childhood Studies to undertake academic leadership and administrative responsibility for programmes in teacher education. Specialisation in alternative approaches to early childhood education, language in early childhood education, or child growth and development is desirable.

Salary: $A23,642-$A25,566 p.a. range. The commencing date for this position will be by arrangement. Applications should include age, present position and salary, professional qualifications and experience, details of publications and research, names and addresses of at least two referees, and any other information considered relevant.

Applications close on 2 September 1977.

Enquiries for further information, and letters of application, should be addressed to the Association of Commonwealth Universities (Appts), 36 Gordon Square, London WC1H 0PF.

A copy of the application should be sent to The Principal, Nursery Teachers' College, 146 Burren Street, Newtown, N.S.W., Australia.

NORTH BRISBANE COLLEGE OF ADVANCED EDUCATION

BRISBANE AUSTRALIA

Head of Department

LIBERAL STUDIES

North Brisbane College of Advanced Education is an autonomous multi-purpose institution with campuses at Kedron Park and Carseldine in Brisbane's northern suburbs. The College has four academic departments — Liberal Studies, Business Studies, Community Studies and Teacher Education — and offers courses at undergraduate and postgraduate level in business studies and education, and at undergraduate level in liberal arts, welfare and recreation. The total enrolment in 1978 is expected to be about 1500 students.

The Department of Liberal Studies at present consists of 40 academic staff and has direct responsibility for an Associate Diploma in Creative Arts and an Associate Diploma in Humanities and Science. The Department also provides service teaching in the areas of English, Mathematics, the Social and Natural Sciences, Music and Art for courses in the other departments.

Applicants should have a higher degree, or its equivalent in an appropriate discipline. They should also have had administrative experience as well as successful experience in organizing programs of study, preferably at a tertiary institution.

The salary range for the position is $23,542 — $25,466 per annum.

Application forms and further information may be obtained from the Registrar, North Brisbane College of Advanced Education, P.O. Box 117, Kedron, 4031, Qld, Australia.

Applications close on 14 October 1977.

PRESTON INSTITUTE of TECHNOLOGY

Plenty Road, Bundoora, 3083, Victoria, AUSTRALIA.

HEAD OF SCHOOL OF BUSINESS

Salary: Aust$28,107 p.a.

THE INSTITUTE, an expanding college of advanced education affiliated with the Victorian Institute of Colleges, is located on a new multi-million dollar campus in Bundoora, a northern suburb of Melbourne. It runs a variety of degree, diploma and post-graduate diploma courses, together with a range of short courses of continuing education.

THE SCHOOL OF BUSINESS currently offers Diplomas of Business in Accounting and Electronic Data Processing, a Degree in Business in Accounting and an Associate Diploma in Industrial Relations. The School is planning to introduce a Bachelor of Business in Applied Economics and Organizational Behaviour in 1978 and a Post Graduate Diploma in Public Accounting in 1979. Other courses where developments are planned include Manufacturing Management and International Trade.

The School has three associated Departments, Accounting and E.D.P., Economics and Industrial Relations and Administration and Law. Approximately 500 part-time and 300 full-time students are currently enrolled.

THE HEAD OF THE SCHOOL OF BUSINESS will be responsible for the operations of the School and will provide academic and administrative leadership for its staff.

THE SUCCESSFUL APPLICANT will have appropriate academic qualifications, business experience and experience in the development of academic and professional courses, together with significant involvement with industry, commerce and professional bodies.

Applications close on 31 August, 1977.

Further information: including conditions of appointment, may be obtained from the Staffing Officer, Mr. B. Langford.

MOUNT LAWLEY COLLEGE OF ADVANCED EDUCATION
Perth Western Australia

SENIOR LECTURER/LECTURER/ SENIOR TUTOR
DEPARTMENT OF EDUCATIONAL TECHNOLOGY

Applications are invited for two appointments to be made within the levels indicated above. For an appointment at Senior Lecturer level it is expected that the applicant will hold an appropriate higher degree and will have relevant experience in educational contexts.

The appointees will be expected to participate, within their level of competence, in both undergraduate and graduate programmes in College. It is expected that an appointee at the Senior Lecturer level will provide administrative coordination and academic leadership in the Graduate Diploma in Educational Technology course for which the College will enrol the first students in February, 1978. In addition to lecturing in Educational Technology, general duties of academic staff may include participation in teaching practice supervision, acting as a staff tutor to a small group of students and teaching in part-time and external modes.

Appointment in the first instance will be by contract of up to three years. Tenure will be considered on completion of the contract period.

Conditions of service in General are those which apply to academic staff in the constituent colleges of the Western Australian Teacher Education Authority.

The commencement date would normally be at the beginning of January, 1978, but this is open to negotiation.

The salary ranges, which are currently under review, are:

Senior Lecturer	A$16,926-$21,663
Lecturer	A$14,014-$18,571
Senior Tutor	A$12,240-$14,014

Applications, including curriculum vitae and names of three referees, should be forwarded to: Migration Liaison Officer, Western Australia House, 115 Strand, London WC2R 0AJ.

Applicants should request the three referees to submit confidential references immediately to the above address.

Applications close on Monday, 5th September, 1977.

QUEENSLAND INSTITUTE OF TECHNOLOGY
BRISBANE—AUSTRALIA

HEAD OF DEPARTMENT

PUBLIC HEALTH AND NUTRITION
(Re-advertised position)

This department is within the School of Health Science

Salary: $A25,458 per annum

The Department of Public Health and Nutrition is responsible for extensive service teaching in basic and applied Microbiology and Biochemistry for other departments in the School of Health Science and for the School of Applied Science. It is responsible also for the graduate Diploma in Nutrition and Dietetics and the Associate Diploma in Health Surveying.

Applications for this position are invited from persons holding appropriate postgraduate qualifications and extensive experience in tertiary academic teaching and administration as well as professional experience and standing in the field.

Conditions of service, duty statement and general information may be obtained from the Personnel Officer, Queensland Institute of Technology, P.O. Box 246, North Quay, Brisbane, Australia 4000.

Applications quoting position, reference number V.59/77, age, marital status, full details of experience and qualifications together with the names and addresses of three referees should be forwarded to the Personnel Officer (address above) by 10th September, 1977.

Teachers are needed to teach English for Science Technology this September

of Arya Mehr University of Technology, Isfahan, Iran.

Native English-speakers are required. MA in TEFL/TESL with teaching experience is preferred. Offer includes: two-year contract, competitive salary, round-trip travel to Isfahan from abroad, and housing allowance. Send résumé immediately to:

Dr Greig Strick, Intensive Language Center, Arya Mehr University of Technology, PO Box 3406, Tehran, Iran.

VIRGINIA, USA

Department of Chemical Engineering

The State University of Virginia in Blacksburg seeks applications from outstanding individuals who might consider either an extended or a permanent position in the United States. Position demands excellence in teaching and in research. Preferred areas of research interest include fluidization, control and measurements, surface chemistry, electrochemistry, biochemical engineering, toxicology, and chemical laser engineering.

Assistant Professorship preferred with salary dependent upon experience and qualifications with a median of about $24,000 per annum. Industrial experience desirable.

Inquiries should be addressed to Dr. H. A. McGee, Jr., Head, Department of Chemical Engineering, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061.

AUSTRALIA

Exchange—Adelaide. LECTURER in MATHEMATICS EDUCATION at a college of advanced education engaged in pre-service education of primary (elementary) school teachers seeks exchange for up to one year of teaching post, house, car. Private arrangement.

Details from Secretary, South Australia House, 50 Strand, London WC2N 5LW.

Courses

Kent County Council — Education Department

DID YOU GET THAT B.ED HONOURS DEGREE?

And was one of your subjects Physical Education? If so you should be eligible for the

M.A. Course in Movement Studies
at Nonington College of Physical Education

September, 1977. The Options available in the London University Degree are: Psychology, Social Aspects or Aesthetic Aspects or Dance.

Further details and application forms can be obtained from:

Academic Registrar, Nonington College of Physical Education, Nonington, Dover, Kent CT15 4HH, or 'phone 0304 840671 now!

HONOURS BA COURSE IN THE DESIGN OF FURNITURE

The Department of Three-Dimensional Design offers a new B.A. course in the Design of Furniture to commence in September 1977. This is a four year sandwich course with periods of Industrial Practice within the syllabus and is intended for students who wish to join the furniture and allied design professions. Further details may be obtained from the Department of Three-Dimensional Design, School of Art and Design, Trent Polytechnic, Dryden Street, Nottingham (Telephone Nottingham 48248, ext. 2017).

TRENT POLYTECHNIC NOTTINGHAM

Classified Advertisements

To advertise in The THES phone John Eadbrook 01-837 1234

THE TIMES **Higher Education** SUPPLEMENT
New Printing House Square,
P.O. Box 7,
Gray's Inn Road,
London WC1X 8EZ

Universities

AUSTRALIA

Applications are invited for the following posts, for which applications close on the dates shown. Salaries (unless otherwise stated) are as follows: Professor $A30,182; Research Fellow $A14,345-$A18,764; Lecturing Fellow $A14,345-$A18,884; Senior Lecturer $A19,290-$A22,805; Lecturer $A14,345-$A18,884; Tutor $A10,159-$A11,003. Further details, conditions of appointment for each post, method of application and application form, where applicable, may be obtained from The Association of Commonwealth Universities (Appts), 36 Gordon Square, London WC1H 0PF.

University of Adelaide
LECTURER IN MUSIC
(Ref. 7.3)
From outstanding 'cellists to teach students in degree courses and single-study students within the Conservatorium; to supervise ensemble playing, to give master classes for solo performers and solo and chamber music recitals. Ample time is allowed for practice and touring for outside engagements. Enquiries about the duties should be directed to the Director of the Elder Conservatorium of Music.
2 September 1977

Flinders University of South Australia
SCHOOL OF SOCIAL SCIENCES LECTURER/SENIOR LECTURER IN SOCIAL ADMINISTRATION
(Two Positions)
Candidates should have qualifications and experience in the provision of social welfare services to enable them to teach and conduct research in the two-year graduate programme in Social Administration and to share responsibility for higher degree students. The programme emphasises generalist training in the first year of the course with opportunities in the second year for specialization in the delivery of services, management of welfare programmes, social policy and planning. Preference will be given to persons with skills in the provision of services to individuals, families and small groups, or to larger groups and communities but appointees will be expected to contribute to the generalist curriculum of the first year as well as in the specializations of the second year.
17 September 1977

University of Sydney
LECTURER IN LANDSCAPE ARCHITECTURE
The appointee will assist with planning a new postgraduate course in Landscape Architecture and will also contribute to teaching in the undergraduate Architecture course and in the postgraduate Town and Country Planning course. Applicants should have a broad ecological approach to the design of landscape, sound practice experience in landscape design including work on environmental impact statements and resource management, and teaching experience. Innovative ideas will be encouraged.
31 August 1977

LECTURERS IN GOVERNMENT
Preference will be given to candidates with interests in Australian public policy and political issues, Australian political sociology and/or Australian political institutions.
26 August 1977

James Cook University of North Queensland
LECTURER/SENIOR LECTURER IN CHEMISTRY (INORGANIC)
Applicants must be capable of taking responsibility for the organisation and teaching of a wide spectrum of inorganic courses (including theoretical inorganic chemistry) and previous experience of this type is very desirable. The appointee will be expected to carry out research in an area of inorganic chemistry. The Department presently has research activity in several aspects of coordination chemistry. It is expected that the appointee will initiate independent research which is either complementary to the existing research programme or in some other inorganic field.
16 September 1977

LECTURER IN BEHAVIOURAL SCIENCES (PSYCHOLOGY)
Applicants should have completed a doctoral degree in Psychology, and have experience in clinical or counselling psychology. Preference will be given to applicants with previous course work, research, or teaching experience in related fields, such as social work, sociology, or social anthropology.
16 September 1977

Australian National University
Research School of Biological Sciences
MOLECULAR BIOLOGY UNIT—RESEARCH FELLOW
The Unit is exploring the molecular mechanism of posttranscriptional control of animal cells. This includes the problems of the HnRNA-mRNA precursor-product relationship and the nuclear processing of mRNA-precursor molecules in the system that the Unit has already developed. Applicants should have some postdoctoral experience in this particular field of research. Some experience in immunological techniques and research would be an advantage.
16 September 1977

CHAIR OF ETHNOMUSICOLOGY
Faculty of Arts
A Chair of Ethnomusicology is to be established in the Department of Prehistory and Anthropology. The University seeks to appoint to the Chair a person of international standing in anthropology whose particular field of interest is music. It is expected that this appointment will stimulate interest in and analysis of Australian Aboriginal music in particular, but previous work in this field is not a prerequisite for the appointment. The major requirement is for an analytical approach to the study of music and the integration of such studies into the more general field of Anthropology. The Department of Prehistory and Anthropology has a considerable interest in the analysis of the arts and other expressive activity and it is hoped that the Professor of Ethnomusicology will contribute to this endeavour.
1 November 1977

LECTURER/LECTURING FELLOW/TUTOR IN POLITICAL SCIENCE
It is hoped that two appointments will be made in the Department of Political Science (Head: Professor J. L. Richardson), one at the level of Lecturer or Lecturing Fellow, the other at the level of Tutor. The appointees will be required to take up duty early in 1978. Appointment as Lecturer will be in the general field of comparative politics, in particular in American and British politics and/or in Marxism and the politics of the Soviet Union and other communist states. Broad teaching interests and/or an interest in quantitative techniques in the social sciences would be an advantage. Applicants for the position of Tutor should be honours graduates in Political Science. The main teaching requirement is in first year, an introduction to political science with an Australian focus. There is also some opportunity to develop more specialized interests.
31 August 1977

Monash University Melbourne
SYSTEMS OFFICER PROGRAMMERS IN ADMINISTRATION DATA PROCESSING
Monash University has a current enrolment of 15,000 students in seven faculties. The Administration has been heavily committed to an on-line computer [illegible] with all major functional areas currently serviced by batch processing systems. Major reviews have been commenced which will involve a shift to both a data base management approach and real time access to files. All programming is done in COBOL for a large Burroughs B6700 configuration. Systems officer (Reference No. 50231076): To take charge of review and subsequent maintenance of major systems areas. Tertiary qualifications desirable, minimum of six years' practical experience, including at least three years with systems analysis design. Sound working knowledge of COBOL. Experience with data base, real time and terminals generally advantageous. Salary $A11,154-$A18,091 p.a. [illegible]
Programmers (Reference No. 50231048): To develop, maintain and document both existing batch processing and new on-line data base systems utilising terminals connected to B6700 computer. Tertiary qualifications desirable. Minimum of two years' COBOL programming experience. Salary $A10,650-$A14,350 p.a. [illegible]
31 August 1977

UNIVERSITY OF ZAMBIA

Applications are invited for the following posts in the Centre for Continuing Education:

(i) DEPARTMENT OF ADULT EDUCATION AND IN-SERVICE TRAINING

SENIOR LECTURER/LECTURER IN:
(a) Teacher Education, Education Sociology and Developmental Education, (b) Teacher Education and Mathematics Education, (c) Teacher Education and Physical Education, (d) Teacher Education and Education Psychology, (e) Teacher Education and English Language Education, (g) Adult Education Curriculum and Methods (3 posts), (h) Adult Education and Workers Education. Applicants for (a)—(i) must be qualified teachers with a first degree or advanced diploma and a higher degree in Education. Applicants for (g) and (h) above must be experienced Adult Educators with a first degree or an advanced diploma and a higher degree in Adult Education. Experience in an African country desirable.

(ii) DEPARTMENT OF CORRESPONDENCE STUDIES

SENIOR LECTURER/LECTURER FOR CORRESPONDENCE COURSE ADVISER
Applicants should have a first degree and a higher degree in one or more of the usual academic disciplines and/or Education. Experience in production of correspondence education materials desirable, and evidence of editing academic material would be an asset.

(iii) DEPARTMENT OF MASS COMMUNICATION

(a) RADIO AND TELEVISION TECHNICIAN
(b) PROGRAMME PRODUCER
Applicants for post (a) must have either a Degree or Diploma in Radio and Television Engineering/Electronics from a recognized institution with five years' experience in studio work. The appointee must be able to install and maintain a modern Radio and Television studio. He/She must also be able to repair radio and television receiving sets. Candidates for post (b) must have a Degree in Mass Communication, Speech Communication, Drama, Speech and Theatre, Broadcast/Journalism, Rhetoric/Delivery, Linguistics or Broadcasting. Previous Broadcasting experience of about three to five years is necessary. Appointee will be expected to effectively handle scriptwriting, programme production, presentation and editing.

(iv) DEPARTMENT OF EXTENSION SERVICE

SENIOR LECTURER/LECTURER (3 posts)
The appointees will act as Resident Tutors in the Provinces. Applicants must be experienced Adult Educators with either a higher Degree in any discipline and an advanced diploma in Adult Education, or a first degree in any discipline and an advanced degree in Adult Education. Experience in an African country desirable.

SALARY SCALES: Senior Lecturer K6,324-K7,200 p.a. Lecturer K4,248-K6,100 p.a. Chief Technician Programme Producer K4,416-K6,700 p.a. Senior Technician K3,750-K4,416 p.a. (£1 sterling = K1.[illegible]). The British Government may supplement salaries in ranges £2,220-£3,234 pa. (sterling) for married appointees or £330-£996 p.a. (sterling) for single appointees (emoluments are normally reviewed annually and normally free of all tax), and provide children's educational allowances and holiday visit passages. Family passages, various allowances, superannuation and medical aid schemes, regular overseas leave. Detailed applications (2 copies) including a curriculum vitae and naming 3 referees, should be sent by air mail not later than 1 September, 1977 to the Registrar, University of Zambia, P.O. Box 2379, Lusaka, Zambia. Applicants resident in U.K. should also send 1 copy to Inter-University Council, 90/91 Tottenham Court Road, London W1P 0DT. Further particulars may be obtained from either address.

UNIVERSITY OF THE WEST INDIES
JAMAICA

Applications are invited for the post of

LECTURER/ASSISTANT LECTURER IN THE DEPARTMENT OF LINGUISTICS AND USE OF ENGLISH
Applicants for the post should have a good degree, preferably in English and/or General Linguistics, and be able to undertake teaching in some of the following areas covered in the course: Varieties of English and Language; Status; Grammar and Usage; Techniques of Expository, Scientific and Technical Writing; Constructing and Analysing Arguments; Descriptive and Narrative Techniques in Literary Writing; Concepts of Style; Descriptive Linguistics.

Previous experience in the successful teaching of this or a similar course would be an advantage and some knowledge or experience of the particular difficulties characterizing the regional English of the Caribbean would be useful.

Salary scale: Lecturer [illegible] J$8,013-J$13,617 p.a. Assistant Lecturer, 1977/78, J$7,22[illegible] p.a. (£1 sterling equals [illegible]).

F.S.S.U. Study and Travel [illegible].

Unfurnished accommodation, if available, may be let by the University at a rental of 10 per cent of salary or a housing allowance of [illegible] per cent of salary is payable.

Up to five full passages (at approved rates) on appointment and on normal termination. Detailed applications (three copies) giving full particulars of qualifications and experience, date of birth, marital status and the names and addresses of three referees should be sent as soon as possible to the Registrar, University of the West Indies, Mona, Kingston 7, Jamaica. Further particulars of the post are available from the same source or from the Inter-University Council for Higher Education Overseas, 90/91 Tottenham Court Road, London W1P 0DT.

ST. JOHN'S COLLEGE CAMBRIDGE
Fellowship in Economics
Applications are invited for a teaching Fellowship in Economics tenable from 1 October 1977 or as soon as possible thereafter and remunerated according to University scales. *Full details may be obtained from the Master, to whom applications, including the names of two referees, should be submitted by 12 September 1977.*

UNIVERSITY OF EDINBURGH
DEPARTMENT OF COMMUNITY MEDICINE
SENIOR LECTURER
Health Service Planning
Applications are invited for the above post. Experience in or a knowledge of more than one of the following relevant fields of interest would be advantageous—organisation and delivery of health care, planning theory and methodology, policy analysis, health economics, operational research and systems analysis. A medical qualification is not essential.

Preference will be given to someone interested in the development of health planning not only in theoretical terms but also through research and in practical health service situations, and there will be every encouragement to foster close links with the NHS. The successful applicant would be involved in departmental teaching especially of postgraduate students and would be expected to assist the training of health service staff from various disciplines in planning methods.

Salary on scale £6,443-£7,061 or £7,040-£10,609, according to qualifications.

Further particulars may be obtained from the Secretary to the University, University of Edinburgh, Old College, South Bridge, Edinburgh EH8 9YL, with whom applications (12 copies) including curriculum vitae and the names and addresses of three referees, should be lodged not later than 31st August, 1977. Please quote reference 506.

UNIVERSITY OF THE SOUTH PACIFIC—FIJI
Applications are invited for post of
LECTURER LECTURER/ASSISTANT IN HISTORY AND POLITICS
(Post 77/42)
tenable from beginning of 1978. The appointee should be able to teach a basic course in international relations and have special interest in either Asian or Pacific History or any other developing region. Salary scales: Lecturer $F8,741-$F9,865 p.a. Assistant Lecturer $F6,201-$F6,2[illegible] p.a. (£1 sterling = $F1.57). In addition the University provides 10 per cent gratuity, superannuation contribution, appointment allowance, partly furnished accommodation at a maximum rental of 15 per cent of salary. Appointments will be for a contract period of three years and will be renewable by mutual agreement. Candidates should send, quoting the post reference, three copies of curriculum vitae with full personal particulars and addresses of three referees to the Registrar, The University of the South Pacific, P.O. Box 1168, Suva, Fiji. Applicants resident in UK should also send 1 copy to Inter-University Council, 90/91 Tottenham Court Road, London W1P 0DT.
Closing date: September 14, 1977.

Fairleigh Dickinson University
Wroxton College
Applications are invited for the post of resident tutor in Government tenable from 1 September 1977. Applications are sought from graduates with a higher degree in Political Science with preference given to candidates offering British Government and Politics.

Salary Scale £2120-£3000 with full board and accommodation.

Applications containing curriculum vitae and the names of three referees should be sent not later than 17 August 1977 to The Director, Wroxton College, Wroxton, near Banbury, Oxon, OX15 6PX.

UNIVERSITY OF SINGAPORE
HISTORY
Applications are invited for appointment to a
Lectureship
in the Department of History
Candidates must be able to teach modern and contemporary Military History and assist in other lecture assignments. A knowledge of diplomatic history will be helpful but not essential. Gross monthly emoluments in the range from S$1,420 to S$2,580 approximately, the initial amount depending on the candidate's qualifications and experience. In addition, the University pays a 13th month annual allowance of one month's salary in December of each year, and contributes to the staff member's provident fund at 16 per cent of basic salary and allowances. Leave, medical, housing and other benefits are also available. Candidates should write to The Registrar, University of Singapore, Singapore 10, giving curriculum vitae (bio-data), with full personal particulars, and also the names and addresses of three referees.

BELFAST
THE QUEEN'S UNIVERSITY
Department of Microbiology and Immunobiology
LECTURESHIP/SENIOR LECTURESHIP
Applications are invited from suitably qualified medical or dental graduates for a joint appointment lectureship between the University and the Eastern Health and Social Services Board from 1st October 1977 or such other date as may be arranged. There are excellent research facilities and the Diagnostic Laboratories have recently been re-equipped and will be extended: the successful applicant will be expected to participate fully in teaching, diagnostic services and research with a clinical commitment of not less than twenty-one hours per week in the Diagnostic Bacteriology Laboratories. The Academic Department can be visited by getting in touch with Professor Fraser and the Diagnostic Laboratories by arrangement with Professor R. R. Gillies.

The salary is £3,964 to £7,773 with provisions for superannuation. An appointment may be made at any point on this scale depending on qualifications and experience. The successful applicant (if suitably qualified) may be graded as senior lecturer by the University and awarded a consultancy by the Eastern Health and Social Services Board. The salary scale for consultants is £7,848 to £10,689. Assistance is available with removal expenses.

Closing date: 26th August, 1977. Further particulars may be obtained from the Personnel Officer, The Queen's University of Belfast, University Road, Belfast BT7 1NN. (Please quote Ref. 77/THES.)

UNIVERSITY COLLEGE AT BUCKLAND
FARINGDON, OXON
LECTURER IN LAW
Appointment with effect from October, 1977.

Applications are invited from suitably qualified graduates to teach for the LL.B of the University of London. Salary negotiable. Post will be residential.

A curriculum vitae with the names and addresses of two referees should accompany the letter of application to the Director of Studies, from whom further details may be obtained.

Tel. Buckland 202/251 (STD Code 036787)

Polytechnics

Applications are invited for appointments as RESEARCH ASSISTANTS and RESEARCH FELLOWS in the following areas:

RESEARCH FELLOWS
(Post doctoral)

Department of Chemistry & Polymer Technology
Interactions between polymers and reinforcing fillers (Silicones). Ref. 3F.

Department of Electrical & Electronic Engineering
Computer aided design methodology. Ref. 8F.

Department of Physics
Application of nuclear techniques to materials analysis. Ref. 7F.

Department of Social Sciences
Co-ordination of existing Inner London labour market project and research on sociological aspects of firms' employment strategies. Ref. 6F.

RESEARCH ASSISTANTS

Department of Applied Biology and Food Science
The microstructure, histochemistry and histopathology of helminth worms and aquatic pollution. Ref. 1A.

The isolation and identification of sulphur volatiles produced during the processing of sulphur rich proteinaceous foods. Ref. 2A.

Department of Architecture
Practical aspects of the use of classification and information retrieval techniques in architectural management. Ref. 3A.

Department of Chemistry & Polymer Technology
New polyamides and polyhydrazides based on aromatic and heterocyclic monomers. Ref. 9A.

The synthesis, characterization and evaluation of some novel organo sulphur [illegible] compounds. Ref. 11A.

Chemical constituents of *Pinus quadrifolia* and related species. Ref. 12A.

Preparation and properties of organo silicon polymers by novel techniques. Ref. 20A.

Department of Civil and Structural Engineering
Behaviour of masonry walls under transverse lateral loading and properties of component materials. Ref. 15A.

Department of Electrical and Electronic Engineering
Computer aided design of engineering systems. Ref. 29A.

The application of microprocessors to computer interface design. Ref. 24A.

Department of Mechanical & Production Engineering
Effect of ageing on the creep properties of Nylon 66. Ref. 19A.

Departments of Professional Education Studies and Mathematical Sciences and Computing
An investigation of topics in geometry and current teaching programmes leading to a new approach incorporating deductive aspects of geometry. Ref. 2DA.

Department of Social Sciences
Interrelation of technological and economic factors in nuclear research and development. Ref. 21A.

Department of Town Planning
Study of methods of communication within local planning authorities. Ref. 23A.

Applicants for posts as Research Fellows should possess, or be in the final stages of completing, a Doctorate. Research Assistants should be good honours graduates in an appropriate discipline and will be expected to register for a higher degree of the Council of National Academic Awards. Appointments are initially for two years with possible extensions subject to satisfactory progress.

Salary scales including London Allowance and Supplementary pay awards are as follows: Research Fellows £3,819-£4,215 per annum; Research Assistants £2,778-£3,021 per annum.

PLEASE QUOTE REFERENCE NUMBER OF POST WITH ALL ENQUIRIES.

Application forms and further details from the Staffing Officer, Polytechnic of the South Bank, Borough Road, London SE1 0AA.

Polytechnic of the South Bank

Faculty of Business (Barking Precinct)
DEPARTMENT OF ACCOUNTING AND FINANCE
A PRINCIPAL LECTURER is required to undertake senior academic and administrative responsibilities in a Department offering degree and professional courses in Finance and Accounts. A professional accounts qualification and experience is essential, a relevant higher degree is expected. (Ref. S/AO 301A)

LECTURER II/SENIOR LECTURER APPOINTMENT
Lecturer sought to undertake teaching of economics on Degree courses Accounting and Finance and other Accounting courses. Appropriate Degree, with particular interest in Managerial economics, required; higher degree and/or relevant industrial experience desirable. (Ref. S/AO.301B)

Department of Systems & Computer Studies
LECTURER II APPOINTMENT
Applicants for this post should have recent commercial, industrial or teaching experience from among the areas of information systems, database technology and operating systems. Appropriate academic qualifications required and experience of ICL 1900 series would be an advantage. (Ref. S/AO.301C)

Department of Law
LECTURER II IN LAW
The Department of Law seeks to appoint two additional members of staff to assist in the development of its wide range of teaching and research. An appropriate first degree is essential and either training or professional experience is desirable.
Courses include B.A. (Honours) degree in Law (CNAA) and various other multi-disciplinary courses at degree and diploma level. (Ref. S/AO.301D)

Department of Student Services, Division of Physical Education (Barking Precinct)
HEAD OF DIVISION—PRINCIPAL LECTURER
A person of considerable academic practical experience and achievement in the field of Physical Education is sought to serve as Head of the Division of Physical Education within the Polytechnic from the 1st January, 1978. The Division has a broad involvement in providing tuition for physical education throughout the Polytechnic and also in providing a wide ranging recreation programme for both students and staff. (Ref. S/AO.301E)

Faculty of Environmental Studies (Waltham Forest)
Department of Civil Engineering
SENIOR LECTURER
For teaching in Water Engineering, on graduate and post-graduate courses and to develop research in this area. Must be graduate: research and professional experience an advantage.

LECTURER II
Candidates should possess a degree in Civil Engineering and have industrial and/or research experience.

Faculty of Science (West Ham Precinct)
Department of Paramedical Sciences
Division of Microbiology
Required from September, 1977 for two terms:—
(1) Part-time associate lecturer for 0.5 timetable to teach FOOD MICROBIOLOGY within the department on the following courses, i.e. B.Sc. (Sandwich) Applied Biology, B.Sc. Applied Biology (Part-time) and H.N.D. Applied Biology.
(2) Part-time associate lecturer for 0.5 timetable to teach GENERAL MICROBIOLOGY within the department on the following courses, i.e. B.Sc. (Sandwich) Applied Biology, B.Sc. Applied Biology (Part-time) and H.N.C./D Applied Biology.

Candidates should have an appropriate first degree and normally a higher degree in a relevant field and preferably industrial experience.

These temporary appointments are for two terms (specifically 23 weeks) whilst the present post holder is on maternity leave of absence and terminate when the post-holder returns.

Special Note for these part-time posts only.

Please contact the Head of Paramedical Sciences, West Ham Precinct, NELP, Romford Road, Stratford, E15 4LZ (Telephone 01-555 0011, Ext. 66) for further details.

Faculty of Engineering (Barking Precinct)
RESEARCH ASSISTANT
Required to investigate crazing and shear banding in glassy amorphous polymers. Applicants should have a degree or equivalent in Engineering, Materials Science or Physics. The post is tenable for two years and registration for a higher degree is possible.

SALARY SCALES: LECTURER II, £3,278—£5,403
SENIOR LECTURER, £5,031—£6,417
PRINCIPAL LECTURER, £5,940—£7,578
(Plus appropriate Government Supplement of up to a maximum of £402 and appropriate London Allowance)
RESEARCH ASSISTANT, £1,932—£2,004
(Plus Government Supplement of £444 and appropriate London Allowance)

ALL POSTS, APART FROM PARAMEDICAL SCIENCES
Further details and Application Form from:—
The Senior Staffing Officer (2), North East London Polytechnic, Forest Road, London E17 4JB. Telephone: 01-527 2272 (Extension 20)

Closing Date: 12th September, 1977. Please quote appropriate reference no.

NELP North East London Polytechnic

DEPARTMENT OF LIFE SCIENCES
Lecturer Grade II/ Senior Lecturers
Plant Physiology and Crop Science
or
Comparative Animal Physiology
or
Plant Physiology
Salary: £3,270-£5,955 (bar) £6,417 plus supplements of £402-£492 per annum.
Further particulars and form of application from The Chief Administrative Officer, Trent Polytechnic, Burton Street, Nottingham NG1 4BU. Closing date: 24th August, 1977.

TRENT POLYTECHNIC NOTTINGHAM

BRISTOL
THE POLYTECHNIC
DEPARTMENT OF CONSTRUCTION AND ENVIRONMENTAL HEALTH
LECTURER, GRADE II/SENIOR LECTURER IN ENVIRONMENTAL HEALTH
(Reference No. L55/20)
Candidates should be GRADUATES in ENVIRONMENTAL HEALTH or a related discipline with appropriate professional qualifications and experience.
The successful candidate will be expected to contribute to the degree course in Environmental Health and other related courses in the department. Previous teaching experience is desirable. The ability to undertake research in the [illegible] would be advantageous.

ASSOCIATE LECTURER, GRADE II/SENIOR LECTURER HALF-TIME IN BUILDING TECHNOLOGY
(Reference No. L55/60)
The appointment is being made to replace a member of staff who is on sabbatical leave for the period 1 [illegible] 1976 to 31 August, [illegible].
Candidates should be GRADUATES and/or members of an appropriate professional body with experience in the CONSTRUCTION INDUSTRY or its related professions.
Previous teaching experience would be advantageous but is not essential. The successful candidate will be concerned with the teaching of courses at [illegible] level in the department. There will also be a limited commitment to administrative duties relating to the above courses.
Salary will be 50 per cent of the full time scale.
3. Full-time salary scale £3,270 to £5,417 (bar) to £5,955 plus £[illegible] plus Phase 2 award.
Further details and application forms (to be returned by 26 August, 1977) from Personnel Officer, Bristol Polytechnic, Coldharbour Lane, Frenchay, Bristol BS16 1QY. Please quote Reference Numbers in all communications.

PORTSMOUTH
THE POLYTECHNIC
SCHOOL OF LANGUAGES AND AREA STUDIES
LECTURER IN LANGUAGE (Latin American Studies)
Applications are invited from persons who have a good Honours degree and are qualified in both LATIN AMERICAN SPANISH, mainly within the programme of the B.A. Hons. Degree in Latin American Studies. The appointment will start as soon as possible.
Salary scale: £3,744 to £5,523 (efficiency bar) to £6,909 per annum.
Application forms and further particulars may be obtained from the Staff Officer, Portsmouth Polytechnic, Alexandra House, Museum Road, Portsmouth PO1 2QQ, to whom completed applications should be returned by 26th August, 1977.

PORTSMOUTH
THE POLYTECHNIC
DEPARTMENT OF ECONOMICS AND ECONOMIC HISTORY
RESEARCH ASSISTANT
Applications are invited from well-qualified candidates who have an interest in research and training in Resource Economics, particularly Fisheries.
The appointment will commence in October 1977 or soon thereafter and will be for a fixed term of two years.
Salary scale: £2,301.00 to £2,[illegible].00 per annum.
Application forms and further particulars may be obtained from the Staff Officer, Portsmouth Polytechnic, Alexandra House, Museum Road, Portsmouth, PO1 2QQ, to whom completed applications should be returned by the 26th August 1977.

MANCHESTER
THE POLYTECHNIC
DEPARTMENT OF POLYMER TECHNOLOGY
Temporary full-time LECTURER required from September, 1977, to June, 1978.
Applicants should preferably be graduates with some experience of teaching polymer technology up to degree level. Industrial experience would also be an advantage.
Salary on the scale £3,270 to £5,4[illegible] plus supplements up to £492 per annum.
For application form returnable by August [illegible], 1977, please send a self-addressed envelope marked T.[illegible] to the Secretary, Manchester Polytechnic, All Saints Building, Manchester M15 6BH.

SUNDERLAND
THE POLYTECHNIC
FACULTY OF SCIENCE
DEPARTMENT OF PHYSICAL SCIENCES
RESEARCH ASSISTANTSHIP IN PHYSICS
Required to investigate problems in the area of Microwave Acoustics. Candidates should have a good honours degree.
The successful applicant will be expected to register for a higher degree. This appointment is for two years in the first instance, with the possibility of an extension.
The salary for Research Assistants is £2,[illegible] by £136 to £2,843 plus £444 Phases I and II supplements.
An application form and further details may be obtained from the Personnel Officer, Sunderland Polytechnic, Chester Road, Sunderland SR1 3SD, and should be returned as soon as possible.

LIVERPOOL POLYTECHNIC
FACULTY OF ART AND DESIGN
DEPARTMENT OF FASHION AND TEXTILES
3/5s Lecturer II in Woven Textiles
A 3/5 Lecturer is required for the B.A. (Hons) Degree Course in Woven and Knitted Textiles. Candidates should hold a degree in this area of design with particular interest in woven textiles or tapestry, and should have had industrial or professional experience. A knowledge of dyeing would be an important advantage.
Salary pro-rata full-time scale. Lecturer, Grade II, scale: £3,744 to £5,985 p.a.
Application forms and further particulars are available from the **Personnel Office, Liverpool Polytechnic, Richmond House, 1 Rumford Place, Liverpool L3 9RH. Tel. 051-227 5561, Ext. 43.**
Please quote reference LP 9286/82.
Closing date is fourteen days from the appearance of this advertisement.

Administration

CARDIFF

UNIVERSITY COLLEGE

Applications are invited for the post of

ADMINISTRATIVE ASSISTANT

in the committee section of the Registrar's office. Salary range, Admin III: £3,911 to £4,811. Duties to commence 1st October 1977 or as soon as possible thereafter.

Applications (2 copies), together with the names and addresses of two referees, should be forwarded to the Vice-Principal (Administration) and Registrar, University College, P.O. Box 78, Cardiff, CF1 1XL, from whom further particulars may be obtained. Closing date 26th August, 1977. Please quote reference 1513.

MIDDLESEX

THE POLYTECHNIC

ADMINISTRATIVE ASSISTANT £3,6?? to £4,075 per annum inclusive

A new post within our Education and Performing Arts resource centre, based at Trent Park, Cockfosters, in north London.

This is an interesting post which is expected to develop substantially in line with organisational changes over the next year or two. Initially, the principal responsibilities would be to participate and provide general assistance in resource centre activities, and to undertake an innovative role in developing effective logistic systems for the resource centre as a whole.

Applicants should be graduates, probably with some education or local government experience, although those with substantial experience in related fields will be considered. An interest in financial matters would be an advantage. Flexibility, clarity of thought and expression and an ability to take the initiative are essential.

Please write for full details and an application form, quoting first class [illegible] to Appointments Officer (Ref. 25/5?), Middlesex Polytechnic, Bounds Green Road, N11 2NQ, to whom completed forms must be returned by August 25.

Research

LONDON

THE UNIVERSITY

GRANTS FOR RESEARCH

Applications are invited from members of the University and teachers in Schools of the University for grants from the Central Research Fund to assist specific projects of research and for the provision of special materials and apparatus. Grants are not made for normal maintenance.

Applications must reach be received not later than September 15, 1977.

Forms of application and further particulars may be obtained from the Secretary to the Central Research Fund, University of London, Senate House, London WC1E 7HU.

NEWCASTLE UPON TYNE

THE UNIVERSITY

RESEARCH ASSOCIATE: COMPUTING

RESEARCH ASSOCIATE: QUANTITATIVE GEOGRAPHY/PLANNING

Applications are invited for the above two posts in the Centre for Urban Regional Development Studies, to work on an S.S.R.C. funded project on the feasibility of defining functional urban areas on the basis of journey to work patterns for the 1981 Census. The project will be under the direction of Professor J. B. Goddard, Dr. S. Openshaw and Dr. P. J. Taylor, and will run for two years from October, 1977.

The Computer Scientist will be concerned with setting up a national Census data base on the University IBM 370/168, the development of data aggregation algorithms and the testing of these against Census data. The Geographer/Planner will be concerned with the statistical and practical evaluation of definitions of cities produced using various criteria.

Salaries for both posts will be in the range £3,440 to £3,868 according to age, qualifications and experience.

Further particulars can be obtained from Professor Goddard, Department of Geography, University of Newcastle upon Tyne NE1 7RU, to whom letters of application (three copies), quoting the names of two referees, should be sent to arrive not later than August 31.

Colleges and Institutes of Higher Education

ATHROFA GOGLEDD-DD CYMRU

THE NORTH E WALES INSTITUTE OF HIGHER EDUCATION

KELSTERTON COLLEGE
Connah's Quay, Deeside, Clwyd

SCHOOL OF MANAGEMENT BUSINESS AND TRADE UNION STUDIES

Required for 1st September 1977, or as soon as possible after: LECTURER II in ECONOMICS and MARKETING.

Teaching to Diploma and Professional Courses.

Application forms and further details from: Institute Registrar, Kelsterton College, Connah's Quay, Deeside, Clwyd, CH5 4BR.

ATHROFA GOGLEDD-DD CYMRU

THE NORTH E WALES INSTITUTE OF HIGHER EDUCATION

LECTURER II IN SOCIOLOGY

Applications are invited for an additional post of Lecturer in Sociology. The post will be based at Cartrefle College, Wrexham, as part of the existing team of Sociologists. Lecturing duties may, however, involve working in other Colleges of The North E Wales Institute.

Applicants must have a degree in Sociology and an interest in one or more of the following would be useful: Sociology of Organisation, Sociology of Industrial Societies, Methodology, Philosophy of Social Sciences.

Application forms and further details from: Institute Registrar, Kelsterton College, Connah's Quay, Deeside, Clwyd.

Colleges of Further Education

LONDON

INNER LONDON EDUCATION AUTHORITY

LONDON COLLEGE OF PRINTING
Elephant and Castle, London, SE1 6SB
Tel.: 735 8484

DEPARTMENT OF PHOTOGRAPHY, FILM AND TELEVISION

LECTURER II IN FILM

Applications are invited from film-makers committed to a creative approach allied to good technique. Applicants should have made a contribution to the development of the medium and/or worked professionally. Breadth of interest, a concern with film theory and its relationship to practice, and an awareness of the needs of film education at the present time would all be advantageous. Flexibility and a sensitivity to individual students are further qualities sought.

Salary in accordance with Burnham (FE) Report, on an incremental scale within the range £3,279 to £5,4?? plus £?02 Inner London Allowance and supplement of between £1?? and £??4, subject to formal approval.

Further particulars and application form (returnable by 29th August, 1977) obtainable from the Senior Administrative Officer of the College.

Courses

SUSSEX

THE UNIVERSITY

M.A. CURRICULUM DEVELOPMENT IN HIGHER EDUCATION

Due to late cancellations three places are now available on this course. Applications from experienced teachers in higher and further education are invited.

The course, of one year's duration, commences on October 3, 1977. It is concerned with curriculum development in its widest sense and pays particular attention to methodological and organisational aspects of curriculum change. The course is essentially project-based and students undertake three extensive studies usually related to developments in their own institutions.

For further particulars, please apply to the Admissions Secretary, Graduate Studies in Education Office, Education Development Building, University of Sussex, Falmer, Brighton, Sussex BN1 9RG (telephone 0273 66755, extension [illegible]). Applications should be made without delay and, where appropriate, interviews will be arranged at the end of August or early September.

Fellowships and Studentships

SURREY

THE UNIVERSITY

DEPARTMENT OF ELECTRONIC AND ELECTRICAL ENGINEERING
Guildford, Surrey

SCIENCE RESEARCH COUNCIL COOPERATIVE AWARD

HIGH DOSE ION IMPLANTATION INTO SILICON

A Ph.D. studentship is available on a joint project between Surrey and Philips Research Laboratories (Salfords), involving cooperation between two of the foremost groups in this country in the area of the application of ion implantation to semiconductor devices.

The work would involve high dose implantation of single crystal silicon at Surrey together with analysis by Rutherford backscattering, Electron Microscopy and I/V measurements. Analysis by infra-red transmission, life testing and device evaluation would take place at Philips.

Applicants with good degrees in Physics, Chemistry or Electronic Engineering should apply to: Dr [illegible] Wilson [illegible]

General Vacancies

N. M. Rothschild & Sons Limited

Archivist

N. M. Rothschild & Sons Limited propose to appoint an Archivist to take charge of their muniments at New Court, St. Swithin's Lane, London. Applicants must be graduates with a Diploma in Archival Administration who have had at least five years experience of archival work. An excellent knowledge of German and French will be required and a working knowledge of Yiddish and/or Hebrew would be advantageous.

Salary will be in the range £5,400–£8,000 according to age and experience; non-contributory pension scheme; 4 weeks' annual leave plus public holidays.

Applicants should apply in writing, giving the names of two referees, before 31st August, 1977, to:

P. F. G. Fane,
Staff Director,
N. M. Rothschild & Sons Limited,
New Court, St. Swithin's Lane,
London EC4P 4DU.

SOCIAL SCIENCE RESEARCH COUNCIL

Applications are invited from young graduates for a [illegible] post [illegible] Social Science Research Council. This is a new [illegible] successful candidate [illegible] work initially as part of a [illegible] providing the Secretariat [illegible] the Research Initiatives [illegible]

The staff of the [illegible] are not themselves engaged in research but provide [illegible] for the Board and Committees which are set up [illegible] the promotion and development of Research and [illegible] Training.

Applicants, who should normally be under 27, should hold a good honours degree in Sociology and/or [illegible] Administration, have an interest in research and the desire to make a career in administration. Some experience in administration or research would be an advantage.

The salary is on a scale £3,0?? to £4,?13 (including Inner London Weighting and Pay Supplement). Starting salary may be above the minimum, depending on class of degree and experience. The hours of duty are 36 per week, excluding lunch hours, and the leave entitlement is 22 days plus 9½ days public and privilege holidays. The Council has its own non-contributory pension scheme.

Application forms and further details may be obtained from: Mrs. Anna [illegible], SSRC, 1 Temple Avenue, London EC4Y 0BD. Telephone 01-[illegible], Ext. [illegible]. Closing date for applications: [illegible] 1977.

LONDON, E1

Private college urgently requires GRADUATE TUTORS to [illegible] the [illegible] courses in HISTORY [illegible] THE SHAKESPEARE [illegible] tender to December [illegible]

Write Box No [illegible], The Times HES [illegible]

SOCIAL SCIENCE RESEARCH COUNCIL

The SSRC is a Government funded organisation operating under Royal Charter. It promotes, supports and carries out research in the Social Sciences.

The Council, whose headquarters staff of 162 are all engaged in administration, has two vacancies:

1. **Assistant to the Secretary of the Research Grants Board which is responsible for the operation of the SSRC Research Grants Scheme.**

   The successful candidate will be at least 27 years and have a good honours degree in one of the Social Sciences.

2. **Clerk to the Council/Assistant to the Chairman and Secretary.**

   The successful candidate will have considerable experience of research administration and the ability to work under pressure. Qualifications at degree level and an interest in the Social Sciences would be an advantage.

Both posts will have the responsibility for organising the business of meetings, preparation of draft papers and factual material, and providing administrative support at senior level.

The salary scales for both posts are within £4,365-£6,243 (including London Weighting) plus £522 per annum Pay Supplement. Starting salary may be above the minimum depending on experience and qualifications. The hours of duty are 36 per week excluding lunch hours and the annual leave entitlement is 22 days holiday plus 9½ days public and privilege holiday. The Council has its own non-contributory pension scheme.

Please write for application form and job descriptions to Mrs Vera Bishton (Ref. CTC/RGB/THES), SSRC, 1 Temple Avenue, London EC4Y 0BD.

Closing dates: for post 1.—22 August 1977
for post 2.—29 August 1977

ASSISTANT ECONOMIST (Statistician)

£2,395-£3,900 (plus supplements)

Applications are invited from both men and women for a pensionable appointment in Statistics Branch of the Department of Manpower Services.

The duties will include helping to develop the Department's Labour Market Statistics, interpreting and producing reports on survey results, and giving statistical advice on survey design to non-statisticians.

QUALIFICATIONS

A good Honours Degree (or equivalent qualification) in an appropriate subject and at least one year's relevant experience. Preference may be given to candidates with computing experience.

In addition to salary scale quoted pay supplements of between £310.50 and £522 per annum will be payable.

Starting salary will be related to qualifications and experience.

Please write or telephone for an application form quoting reference SB 207/77/THES to Civil Service Commission, Rosepark House, Upper Newtownards Road, Belfast BT4 3NR (telephone Dundonald 4585, ext. 257). Completed forms must be returned to arrive not later than 30th August, 1977.

NORTHERN IRELAND CIVIL SERVICE

WORKERS' EDUCATIONAL ASSOCIATION SOUTH EASTERN DISTRICT

Applications are invited for the post of

Tutor-Organiser

in the Brighton area of East Sussex.

Candidates should have a University degree or similar qualification in sociology, economics, politics or related subjects and should have previous adult teaching and/or organising or administrative experience. Salary scales: (under review) Scale I £2,725 x £162 (2) to £2,889. Scale II £3,122 x 11 varying increments to £5,470 (normal maximum) x £231 (1) to £5,701 after three years on the normal maximum. Commencing salary according to age, qualification and experience of person appointed.

Further details and application forms from: The District Secretary, W.E.A. South Eastern District, 4 Castle Hill, Rochester, Kent ME1 1QQ. Closing date 31st August, 1977.

WORKERS' EDUCATIONAL ASSOCIATION SOUTH EASTERN DISTRICT

Applications are invited for the post of

Tutor-Organiser

in the Medway area of Kent.

Candidates should have a University degree or similar qualification in industrial relations, economics, politics or related subjects and should have previous adult teaching and/or organising or administrative experience.

Salary scales: (under review) Scale I £2,725 x £162 (2) to £2,889. Scale II £3,122 x 11 varying increments to £5,470 (normal maximum) x £231 (1) to £5,701 after three years on the normal maximum. Commencing salary according to age, qualification and experience of person appointed.

Further details and application forms from: The District Secretary, W.E.A. South Eastern District, 4 Castle Hill, Rochester, Kent ME1 1QQ. Closing date 31st August, 1977.

HEAD of RESEARCH and DEVELOPMENT UNIT

to be based in London or Brighton. Recognised English Language School invites applications from candidates with the following qualifications: relevant postgrad degree(s)/diploma(e); min. 5 years' EFL experience—preferably including teacher-training and production of ESP materials.

Please write, enclosing c.v., to: Rachel Belgrave, Regent School, 148-150 Camden [illegible] (Details of appointment will be sent to suitable applicants by return of post.)

EFL TEACHERS

Applications are invited from qualified and experienced teachers of English as a Foreign Language for full-time posts from September and October onwards. Experience in ESP or Cambridge Examination work would be an advantage.

Apply in writing with full curriculum vitae to The Principal, St. Giles School of English, 18 Cromwell Road, Hove, Sussex BN3 3EW.

Overseas

OVERSEAS DEVELOPMENT

KNOW-HOW: vital to developing countries

Asian Institute of Technology, Bangkok Thailand

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The posts are wholly financed by the British Government under Britain's programme of aid to the developing countries. In addition to basic salary and overseas allowances other benefits normally include paid leave, free family passages, children's education allowances and holiday visits, free accommodation and medical attention. Applicants should be citizens of the United Kingdom. For full details and application form please apply, quoting ref. 317 stating post concerned, and giving details of age, qualifications and experience to:

Appointments Officer,
MINISTRY OF OVERSEAS DEVELOPMENT,
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ODM

HELPING NATIONS HELP THEMSELVES

LETTERS TO THE EDITOR

TEC credit exemption problems

Sir,—The National Association of Teachers in Further and Higher Education is concerned about administration allowances for Technician Education Council programmes and about the educational desirability of such programmes. Others have expressed concern about the educational standards of these programmes.

I have not yet seen any complaints about a more mundane problem arising from the TEC's proposals; that of timetabling the programmes. We are being asked to fit the flexibility of a unit credit system into the rigid framework of part-time day release. A colleague on exchange from an American community college with years of experience of the unit system considers that we are crazy to even attempt the task.

In preparation for starting TEC programmes in 1978, I have been investigating the problems created by the credit exemption system. A survey of 250 engineering technician students provided the data for deriving a sample population of a first year intake.

In the certificate programme for mechanical and production engineering technicians it is possible to gain exemption from all five student timetables to accommodate all combinations of level I units, hence it requires 31 different combinations of credits. There is only one timetabling arrangement which will accommodate all students and that is to timetable each unit concurrently with its pre-requisite.

This solution is likely to place an intolerable constraint upon the timetables of service departments, and hence may prove to be unacceptable. Many of the remaining 119 permutations of a level I and level II timetable are unworkable. The remainder yield class sizes which are either far too large or far too small and the latter condition cannot be improved without worsening the former.

In short, while we at present timetable by groups we will in future have to timetable each individual student. I am well aware that such individual timetables are a common feature of many courses in further and higher education but not within the confines of part-time day release.

At present one aims to keep average class sizes within the range of 16 to 20 students. It would appear that the best one is likely to achieve for TEC programmes is a range of eight to 20. I understand that the DES has said it will be concerned if TEC programmes prove to be more expensive than present technician courses. This seems to me to be a foregone conclusion certainly in terms of hidden costs.

It would be interesting to know how colleges currently running TEC programmes have solved the timetabling problem. Rumour has it that some have simplified it by rejecting the unit credit system in favour of the exemption system used for integrated courses. It would also be interesting to know if the TEC gave any consideration at all to these effects of their proposals.

Yours faithfully,
ROBERT HEDLEY,
Head of department of mechanical and production engineering,
Medway and Maidstone College of Technology.
Studies,
Polytechnic of Central London.

Audio-visual contributions to learning

Sir,—My friend, Dr Jon Baggaley, writes (*THES*, July 22) about evidence that live lectures have produced significantly higher levels of achievement than videotape recordings of lectures, which in turn have produced a significantly higher level than "studio-produced videotapes".

With respect, such evidence cannot logically be generalizable. Presumably only in Newfoundland (from where the evidence emanates) are recordings still being made of academics lecturing: student resistance to such exercises was widely documented a decade ago.

If it is the case that at Memorial University studio-produced videotapes have been proved even less valuable they must indeed be poor stuff. Such comparative studies were being likened as long ago as 1963 to the struggles "of the mediaeval physician to determine which of two herbs had greater curative value, when he had no knowledge of the chemistry, physiology or pharmacology involved".

The most valuable research into the cost-effectiveness of audio-visual contributions to learning examines ways of best utilizing existing facilities for academic purposes in specific contexts. That is the kind of investigation Jon Baggaley has himself suggested in the past—in "Developing an Effective Educational Medium", *Programmed Learning*, May, 1973.

Yours faithfully,
J. R. MOSS,
Director,
Leeds University Audio-Visual Service.

Sir,—Mr Baggaley seeks to support Lord Annan's view on the lack of evidence for the cost-effectiveness of audio-visual media by quoting the results of a Canadian project that "the live lecture produces a significantly higher level of achievement . . . than do either videotapes of live lectures or studio-produced videotapes".

This is as may be and it is useful to have another research report to add to the many others not all of which point to the same conclusion.

But this tells only half the story. Cost-effectiveness means that the same educational results can be achieved at lower cost or that better educational results can be achieved for the same cost. We need to know something about the costs of alternative media in the Canadian project before we can say whether or not it supports Lord Annan's view.

Now it may well be that the live lecture in this particular study was also the cheapest, in which case Mr Baggaley's point is correct. But the more relevant question then is not whether audio visual media are more or less cost-effective than live lectures but why they are so.

One reason is that the great cost-effective potential of media in allowing more students to be taught at little extra cost is often not realized in practice. It is the reasons for this gap between the potentiality and reality of the use of audio-visual media that should be the real focus for investigation.

Yours faithfully,
LESLIE WAGNER,
School of Social Sciences and Business Studies,
Polytechnic of Central London.

General Vacancies

LECTURERS

for Degree and post-graduate courses in

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The Royal Military College of Science at Shrivenham, Oxfordshire, provides a wide range of university-level courses for civilian and military personnel. It has a long history of expertise in Weapon Systems, and the Department of Mechanical Engineering is now introducing a one-year post-graduate course in Gun Systems Design. This creates two openings at Principal and Senior Lecturer level.

The course covers all aspects of the design process—including the design, development, production and manufacturing of the sub-systems, components and ammunition which make up the complete weapon: the last 3 months are devoted entirely to a design study. Supporting instruction is also given in ballistics, explosives and weapon dynamics and thermodynamics. According to their experience, the successful applicants will either join the Gun Systems Design team immediately or undertake more general mechanical design teaching duties. They will be expected to specialise in selected aspects of gun systems design—for which appropriate training may be arranged—and to undertake research in the gun or ammunition design field. (Research is a vital part of work within the College, which has excellent facilities and equipment, and many of the projects are sponsored by and carried out in collaboration with Government R & D establishments and [illegible] industry.)

Candidates must have a 1st or 2nd class Honours degree, or an equivalent qualification, in engineering or science and experience in engineering design. Relevant experience in the design aspects of weapon technology is desirable.

Starting salaries will range between £4,700 to £6,300 for Senior Lecturer, and £6,030 to £7,725 for Principal Lecturer, according to qualifications and experience. Non-contributory pension scheme.

For further details and an application form (to be returned by 30th August, 1977) write to Civil Service Commission, Alencon Link, Basingstoke, Hants RG21 1JB, or telephone Basingstoke (0256) 68551 (answering service operates outside office hours). Please quote Ref: S/9564/2.

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Applications should be sent to: Lord McCarthy, IRT Research, Oxford Centre for Management Studies, Kennington, Oxford.

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